

Marketing *of* Information Technology

*Concepts, Products, Services
and Intellectual Property Rights*

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and Intellectual Property Rights*

K Venkatesh

*Faculty — Marketing of IT
Indian Institute of Management
Bangalore*



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To
My loving sister
K. Uma
Who lives in my fond memories forever

PREFACE

I find the study of marketing quite interesting. I have 14 years of experience in the Information Technology industry and naturally liked marketing of IT. But, what makes marketing of IT interesting to anyone? IT has become pervasive. In many countries, IT not only touches but also affects people — in their communication, occupations, travels, lifestyles and many other facets of life.

The success of a product or a service depends on how it is marketed. There are umpteen examples of great products and services that did not see the light of the day or failed due to lack of appropriate marketing. Generic understanding of marketing is limiting. Success in marketing can be achieved by adopting a scientific approach to the entire technology cycle — from concept to after-sales, innovation and, equally importantly, the help of the domain knowledge of the marketing personnel.

Domain knowledge is especially necessary for marketing high-technology wares. Every IT marketing person must know the product, service and intellectual assets that he/she is selling. Compared to many other industries, the IT industry changes faster, thereby necessitating that marketers stay abreast of latest trends in technological development and newer means of delivering IT services.

This book aims to provide knowledge of marketing of IT, the interdisciplinary area of marketing and information technology. The approach employed in this book is more practical than academic—learning with examples and subsequently progressing to concepts. It explains how an IT ware can be made market-focused at every stage—from concept to post-sales support—thereby improving the probability of its success in the market.

The book presumes that the readers may not have an IT background and hence most of the IT terms used are colloquial. The concepts in this book have been in use, though in a draft form, at the Indian Institute of Management, Bangalore, where I teach a three-credit course in Marketing of Information Technology. This book serves as a professional guide for managers and decision-makers in IT vendor companies as well as a textbook for students of marketing who intend to specialize in marketing of IT.

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This book is divided into four parts. The first part introduces primary wares of IT—concepts, products, services and intellectual property rights. The second part discusses money matters—cost and price, and most importantly, the “free and open” wares. The third part deals with assets that complement the primary wares and are required for marketing, like, going local, technical marketing, branding, launch and technical support. The final part concludes with Indian market-specific details. References to websites and articles are provided wherever necessary.

The readers are welcome to interact with me on my blog “Marketing of IT” (<http://technomarkets.blogspot.com>)

K VENKATESH

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Even a person that taught me an alphabet is my teacher.

Kannada proverb

Since I have learnt many good things from many people, it is important for me to thank all of them. I would like to acknowledge the various roles they have played in my life and in the shaping of this book:

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PART I

MARKETING OF INFORMATION TECHNOLOGY

- 1 Introduction to Marketing of Information Technology**
- 2 Classification of the Information Technology Products Market**
- 3 Classification of the Information Technology Services Market**
- 4 Information Technology Intellectual Property Market**

INTRODUCTION TO MARKETING OF INFORMATION TECHNOLOGY

This book is primarily on two themes: to study the Information Technology (IT) market, and to understand how to market IT — the concepts, Intellectual Property (IP), products, and services. One needs to understand the market to successfully promote one's wares in it, and marketing of IT is no exception. Accordingly, this book begins with an introduction and analysis of the IT market. It categorizes the IT market under three areas, owing to their distinct characteristics, namely, classification of the market, economic aspects of marketing IT, and the organizational functions required for the purpose.

Why Should One Understand IT Market, or Marketing of IT?

The IT market is distinct from many other markets because of its uniqueness and peculiarities. To begin with, this is one market where many products¹, intellectual property (IP), and services² are offered to buyers for free (unheard of in any other market or industry!). Then there are companies or organizations that let buyers use and try their products for free, and willing buyers who are prepared to participate in product engineering for free. Also, there are companies or organizations that offer their products for free, but limit the improvement that the user may bring about in the original product or service. Much to its ill-reputation, this industry also markets products with many defects, frequently referred to as bugs³. This of course is changing, like with any other market, with buyers becoming more proactive in asserting their rights, and companies paying up for damages or recalling their products and offering replacements.

This market has another distinct feature — its consumers are skilled personnel, well-educated or otherwise. They are mostly connected through the common medium of the Internet. So, the bad word can spread nearly at the

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speed of thought itself! Despite this high level of skill and connectivity, it is surprising that the consumers have taken so long to take on the erring companies. It is only in the early part of the first decade of 2000 that one got to hear of a significant number litigations in this industry.

In other markets, like that of automobiles, vendors allow but discourage their buyers from modifying the products/services after purchase, but the vendor's warranty ceases after any such modifications. In IT market, even modifications to products — commercial, or sometimes otherwise — have to be made only with the explicit consent of the creators, thus entering to the concept and business of derivative IP rights.

Technology per se requires some skills to use. In IT, the skill requirement is quite high, hence it increases the need for buyer education. IT wares are also credence goods, where the buyer remains unsure of his/her purchase decision even after having bought the product. So, marketing such wares requires additional skills at the individual sales person level and, therefore, the complexity increases from the product to the IP, with services in-between them.

IT Market

Talking of the IT market, it is amazing to see how its landscape has undergone a sea change. The Internet that began as a strategic network expanded later to include universities and research institutions. Computers were targeted at organizations and individuals were not considered to be buyers. Companies however did not remain exclusive buyers of computers for long. Gone are those days when photographs were taken on film rolls, shot in studios and printed in laboratories. Or when printers were sold only to presses, scanning was strictly a “laboratory” exercise and wireless was something used by governments. Or Local Area Networks (LANs) were used only in offices and sending or receiving faxes required facsimile machines. Or when 1 Mbps⁴ bandwidth was a luxury in organizations and the public had to go through publishers to get its articles published. Or when videos had to be broadcast by television channels, a phone was nothing more than a phone, and tele-porting was only seen in children's comics. Now digital cameras have become ubiquitous and got embedded in devices such as mobile phones which also boast of music, FM radio, video recording, games and, above all, high speed Internet access with rich experience software. There are deals where, when one buys a computer for personal use, one often gets a printer free. The Personal Computer (PC) has already completed more than 20 years of existence. Scanning of documents and photographs to archive is all too common. Many households now have their own Wireless LANs (WLANs) with all their computers interconnected, as well as connected to other “intelligent devices”. Bandwidth is available on demand thereby enabling many users connected to the Internet to publish bandwidth-intensive content such as multimedia publications and home videos⁵. Wireless too is transforming by the day; there are phones that work on both WLANs and on

conventional mobile networks. Voice and Video Over the Internet Protocol (V2oIP) is the closest to tele-porting, and bi-directional conferencing is a breeze with services like Skype⁶ and Cisco's TelePresence.

How is Marketing of IT Changing? What About IT Products?

So, what does this market flux mean to the marketer? Simple, the concept of segmentation is passé. The products that were marketed at a high value to organizations are now being sold to individuals and households by retailers, such as eBay, Circuit City and Fry's. Adding to the complexity, these products are being sold online as well! These retailers have their own set of challenges, because each of their competitors is just a click away from the consumer, and their size does not matter.

The omnipresence of the Internet has posed greater challenges to creators of software and content, for these products get pirated and reach the market (black market, of course) often before the genuine ones do. Software, music, videos, movies, electronic designs — no Internet-communicable content is spared from the vulnerability to piracy. It is often believed, with some truth per se, that money from piracy funds organized crime⁷. This situation increases the responsibility of the marketers to build piracy-resistant products and to work with willing governments to curb piracy for their own, as well as the society's good.

If there are the devils of piracy at one end of the IT market, there are open source angels at the other. The open source movement of giving away products for free (both in the sense of freedom to modify, and free to use) is well organized⁸. This movement poses a serious threat to commercial entities that market their software. Will anyone buy a priced product or a priced service if someone is offering a similar one (and most likely a better one) for free? There are consumers that do buy, instead of selecting a freeware, for various reasons that we will discuss in the subsequent chapters. The industry has also found an opportunity in this competitive landscape. It has evolved a new set of companies that work on a shared source concept — where a basic product is offered free for use, and anything else around it is priced. Companies too are putting their might behind open source products, sometimes at the cost of killing their proprietary software⁹, for they have understood the business advantages of open source.

The traditional means of service delivery, such as those required for post sales support, is also changing, with software made intelligent to support them, while connected to the Internet. This change has greatly reduced the cost of supporting the buyer technically but, simultaneously, has also probably reduced the profits derived from the traditional buyer support. Marketing of software

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has taken a quantum leap and begun a new paradigm with vendors offering “no risk experience” to the user, even before installing the products. Linux products like SimplyMEPIS, Mandriva and Kubuntu come in “Live CDs.” Users can simply restart¹⁰ their computers with these CDs and try out their Linux distribution without having to worry about reconfiguring their computers! Linux distributions (distros, in Linux parlance) such as dyne:bolic offer Linux experience without installation, but just by copying some files from the CD/DVD to the computer. Many Linux vendors even ship the CDs/DVDs for free, to woo users to install Linux on desktops¹¹.

On the hardware front, the single layer microprocessor¹² is a thing of the past, though many vendors may still offer such processors to the market for ultra-low-end buyers. Multi-core processors (processors with multiple layers of processing electronics in one box) have already captured a large share of the computer market. Vendors like Intel and AMD have launched dual core processors while Sun Microsystems has launched 8-core processor based CoolThreads servers. All these processors have significantly higher performance compared to their predecessors. Temporally, the price of hardware has been going in a direction opposite to that of hardware performance. What does this mean? It means that the unit cost of hardware performance has reduced and the product life cycles have shrunk, and are going to shrink further, the software way. The story is similar to that of the digital storage market. Bandwidth is available on demand and at low cost, and home connectivity is spreading like wild fire, especially in tier 1 and tier 2 cities in countries like India as well. All this is good for the consumer, but how does this affect the vendor? It is like in the old cowboy saying — the fast and the dead. In IT, it would mean a constant need to improve performance, high quality of support, differentiation that is in line with user expectations, and alignment to standards; not providing this would mean going out of business.

IT is also making giant inroads into the mass market. Phones now pack the computing power that servers had two decades ago. These phones are even more versatile than those servers. If a mobile phone user, hitherto classified as a phone user, is now classified as an IT user, the challenges that suddenly appear to the vendor are enormous. If usability is one important factor for design of mobile phones, another equally important factor is aesthetics, for these phones remain trendy for a period that is probably shorter than the life cycle of desktops or servers. The marketing situation becomes even more complicated because the sales channel that sells mobile phones is usually a retail outlet or an online vendor that is very different from the conventional corporate sales channel. To worsen the situation, the mobile domain always walks on the cutting edge technology that leads to low success rate, and the market is fragmented. You will find these topics discussed in the chapters on classification of the IT market, free software, and marketing of IT products.

So Then, What About IT Services?

On the services front, the IT industry is adopting new delivery models with the onset of global sourcing. Countries with good Internet connectivity and qualified populations have become the new hubs of IT development, maintenance and support. They have also become the new large scale consumers of IT. International deals of sourcing and vending IT work (also called offshoring) of the size of multiple millions are the order of the day. In such a scenario, marketing of IT assumes a critical role. The discussions, negotiations and decisions are no longer only on quality, schedule and pricing; they are also inclusive of country-specific risks, business continuity, disaster recovery, adherence to standards, scale of operations and many other factors. These points are discussed in greater detail in the chapter on marketing of IT services.

And the Cost the Buyer Incurs?

IT services vendors are constantly on the lookout for new ways of graduating from simple staff augmentation (“body-shopping” in slang) to becoming strategic partners of the buyers. The scenario is no different with product vendors. It creates the need for newer business models and corresponding stories to sell the services (in marketing terms, it is the “spin”). Thus come the models such as Total Cost of Technology Ownership (TCO for short), and Return on Investments (RoI). One chapter is dedicated to the details of cost modeling that need to be considered while marketing IT.

Are Only IT Products and Services Marketed?

No. The IT market is inclusive of concepts, IP, products and services. Concept marketing is embedded in the marketing of IP, products and services. Did we not talk of stories a little while ago? It is concept selling that precedes sales of wares. Many IT services vendors from India sell concepts to their buyers prior to marketing services such as Six Sigma quality consulting, balanced score card consulting, and other value-added services. However, concept selling is more likely to succeed if the economy is growing because, during an economic slump, companies tend to hold back investments on technology or related services.

Marketing of IP is a very difficult thing indeed. It is done via the licensing mode and, many a times, IP is not the sole component of the deal. That is to say, IP may be bundled with other products or services. The specifics of IP marketing are discussed in the corresponding chapter later in the book.

How do I Price IP, IT Product or IT Service?

The IT industry has borrowed the pricing principles from various other industries. However, that does not discount the fact that IT pricing is innovative in many ways. There are pricing structures ranging from the simple to the weird. Services, products and IP have a lot of similarities, and probably an equal number of differences. Like in other industries, pricing may be specific to a

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buyer, or generic as in the case of off-the-shelf products. Pricing is discussed in various chapters in this book, to make it more relevant to the context. Various factors that influence pricing, such as competition, piracy, localization and local rules are also discussed in detail. However, the one thing a student of IT marketing needs to remember on pricing is that there is no fixed price! This is akin to saying the only rule is that there are no rules!

Can I Market Same IT Wares Everywhere?

IT vendors have realized that it is difficult to sell the same stuff everywhere on earth. Hence, many of them have adopted the approach of “different strokes for different folks”. In the IT context, it is called Globalization (G11n, for short). G11n is preceded by a process called Internationalization (I18n for short), which means technologically enabling the ware to go local. The multiple needs for going local, the various details of implementation of Localization (L10n), the requirements and other factors are discussed in the chapter on Globalization of IT.

Talking of Going Local, What About India? How to Market IT Wares Here?

Like every country, India too has its specific IT market characteristics. The buyer behaviour, the seller behaviour, the government purchase process, the local requirements and other details are discussed in the chapter on the IT market in India. This discussion also assumes importance from the fact that India is a major technology offshoring destination and consequently, is growing to be a significant buyer of IT. Its large IT development and maintenance community can influence the IT purchase decisions significantly.

Can Any Vendor Sell IT Easily?

Marketing and selling is always a difficult proposition, more so in IT. This is because the vendor, the buyer, the buyer’s end user, and the buyer’s partners have to be IT aware to make correct (or at least favorable to the vendor in question) purchase decisions. The buyer’s decisions can be influenced, or at times obligated by the local government, buyer’s legacy, buyers and contractors. There are many entities within and outside the buyer that require the vendor to speak with in appropriate parlance. This calls for multi-skilled persons to be employed in the vendor’s organization. There are also the conventional marketing activities that need to be completed for the IT sale. The chapter on pre-sales/Technical Marketing discusses all these aspects in greater detail.

How Does Vendor Launch IT Offering in the Market?

Good engineering does not ensure the ware’s success. The issue of citizenship is analogous to the L10n of IT. There are specific activities that need to be

completed prior to the launch, and post-launch. The launch of IT ware depends on the nature of the ware — IP, software or hardware. Then, there are re-launches. The chapter on launching of IT ware discusses all these and more.

How to Maintain the Buyers' Trust?

Good product engineering does work in the vendor's favor. Yet, the vendor cannot ensure functioning of IT in all conditions. The limited scope of quality assurance in a larger IT ecosystem and the requirement to guide the buyer necessitates the technical support team in the vendor organization. Does the technical support team have any role in the marketing of IT? Definitely yes, especially for repeat sales, up-selling and cross-selling. Does the Internet play a role in delivering support? Yes. More details of the role of technical support teams in the marketing of IT are discussed in the corresponding chapter.

What About Branding IT Wares?

Like other industries, IT too needs to brand its wares — be they IP, hardware or software. Even freeware IT needs branding. What role does branding play in marketing of IT? How do IT vendors leverage the Internet to popularize their brands? How can open source products be branded? Many of these questions are analyzed and answered in the chapter on branding of IT.

The Pre-requisites

This book does not require the reader to have any advanced knowledge of technology. A conscious effort has been put in to make this book easy to read. The presumption is that the reader is aware of using a computer, can browse the Internet and can identify hardware, software and devices. The chapters have pointers or links to guide interested users to go deeper into the relevant topics. The idea has been to make this book comprehensible to the not-so-technology-savvy reader. At the end of every chapter, there are broad or pointed questions to the reader — student or a practicing IT marketing person.

Notes

1. Economic freedom and intellectual property freedom would be discussed in subsequent chapters.
2. A WIMAX service is planned to be offered free to users in Silicon Valley by a consortium of companies. For more information, you can refer to <http://www.zdnetindia.com/news/software/stories/153220.html>.

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3. In IT companies, it is jocularly said that bugs are marketed as features!
4. A bit is the smallest unit of binary data measurement. 1Mbps is the data transfer rate of 1024×1024 bits per second.
5. YouTube, Google, Yahoo and many others host such videos for free.
6. The author conducted his video lecture to Post Graduate law students of The University of Michigan Law School, US from his residence in Bangalore, India, using Skype's free video chat service. Is this closest to teleporting? You bet!
7. Refer to this *BusinessWeek* article
http://www.businessweek.com/magazine/content/05_06/b3919001_mz001.htm.
8. Open Source Initiative site can be found at <http://www.opensource.org>.
9. IBM has invested its resources in Linux, made it its flagship computer Operating System (OS) software, and seems to be underplaying its own AIX.
10. Kubuntu does not even require restarting of the computer if the user is running Windows OS; just loading the CD into the drive would suffice.
11. Simply put, desktops are personal computers while servers, more powerful than desktops, are used in organizations.
12. Microprocessor or, as often called, processor, is the brain of the computer which does most of the mathematical and logical operations.

Questions

1. Is marketing of an IT product any different from marketing of any non-IT product? What are the differences? Are there any similarities?
2. What are the skills required for marketing of IT products and services?
3. What role does Internet play in marketing of IT?

CLASSIFICATION OF INFORMATION TECHNOLOGY PRODUCTS MARKET

Information Technology (IT) market is vast, with its implications reaching far beyond businesses and invading human lives, even questioning the very nature of human identity. In this chapter, we will discuss the implications of technologies in general, and those of IT in particular. Further, we will dissect the IT market, and discuss the contemporary market. We will limit the discussion to products and exclude services. The services market is discussed in a separate chapter.

Technology

Technology is application of science to provide utility to individuals and societies. Primarily, technology can enhance the quality of life. Technology can transform society. Technology can cut red tape — by breaking government barriers. For example, the Internet changed the software procurement process in India — from cumbersome government-defined one to a simple download wherever possible, without having to go through the Customs Department! Governments cannot stop good technologies from propagating. A fine example of how a good technology establishes itself in the market is the Voice over Internet Protocol (VoIP) telephony that broke the monopoly of the Public Services Telephone Network (PSTN) operators.

The key driver for adoption of new technology in business is the necessity to derive competitive advantage. The need may be simpler—technology may be used to simplify operations and increase transaction efficiency. Discontinuous business parameters such as obsolescence of some technologies, government policies, innovation made by competitors and other factors necessitate superior technologies to survive and stay ahead of competition. Newer IT may be required for addressing newer scientific or social challenges as well. For example, increase in data storage may require superior databases, while new scientific works like those on the human genome may need different data structures.

Impact of IT

The impact of IT is wide and varied. IT can bring a discontinuous change in the applied field, for example, the shift from sequential access to random access has changed the data storage landscape. IT enables better medical imaging, and has even transformed the process of analyzing such images — images sent from the US are being analyzed by doctors working in countries like India. Substitute technologies too bring a sea change — like the way Internet made Iridium redundant. Will CATV replace PSTN-based Internet's last mile connectivity? It is difficult to predict. The process of “dis-inter-mediation” (basically, eliminating the middleman) has gained more momentum with entertainment companies reaching their buyers directly with technologies like Direct-to-Home (DTH). DTH eliminates the need for the last mile TV intermediary (Cable TV operator that is usually monopolistic in a given locality), thereby breaking the cable TV operator cartel.

On the other hand, the business success of IT adoption depends on the success of the technology per se. For example, ActiveX, was dubbed the failure of the decade, and any investment made by companies in this technology may have turned out to be lemon.

Technology brings about enormous behavioural changes. For example, e-mail has become the default business communication channel, almost replacing telephone as the preferred channel.

However, amidst all buzz words, rhetoric, hype, reality and implications of technologies, one idea is true — all technologies are mortal, irrespective of their merit.

Classification of IT Products Market

For any marketing person or IT vendor, it is important to understand the structure of the IT market. This helps in positioning the IT goods, pricing them optimally, identifying opportunities for cross-selling and up-selling, and applying techniques to derive best profits. With this thought, we will proceed to learn the structure of the IT market. There may be many ways of classifying the IT market, but it can simply be classified as that of products and services.

Simply put, there are three classes of IT products: hardware, software and devices. Hardware includes processors, boards, peripherals, data acquisition systems, networking and communication equipment. Software includes hardware drivers, Operating Systems (OS), applications and programs used in devices. Devices are hardware that are not complete computing systems, but have specific functionalities like gaming, word processing and others, and usually have the ability to interface with computers. Also, sometimes the software embedded in the devices can be replaced or modified by a phenomenon termed re-programming or upgrading.

The above classification is based on the following rules of thumb:

- All software need hardware, but the converse need not be true.
- Some hardware are programmable, while others are not.
- Generally, every hardware vendor sells own software.
- Software can be modified for generic use, or customized for specific use. They can also be made to work on multiple types of hardware.
- Devices are basically hardware which have embedded software programs. The programs may be application specific, and modifiable.

Characteristics of Hardware Market

Most computer hardware needs software to function and hence it is the hardware market that creates the software market. Thus, the hardware market has spawned the multi-billion dollar software market. Some of the characteristics of the hardware market are as follows:

1. The core technology changes are slower. For example, at first, it was solid state valves; then came the semiconductor; later the optics. These technologies had ample time to be replaced by newer ones. Where does the hardware market go from here? Nobody can predict in detail. However, some trends emerge that can indicate the shape of things to come. Predictably, its performance and capacity may increase, and the size may decrease — a phenomenon known as miniaturization, for example, reduction in the size of desktop computers and evolution from laptops to Ultra Mobile Portable Computers (UMPC).
2. The hardware market has fewer buggy products than that of software. This is quite obvious as re-fabricating hardware is an expensive proposition and the vendors may even be forced to recall their defective products. The defective laptop batteries that caused laptops to catch fire affected airline travel, when many airlines disallowed carrying of laptops in the flight cabins. This incident has vividly demonstrated the far reaching ill effects of defective IT products. Hence the hardware vendors exercise extra caution in ensuring high quality of the products. Many companies have recalled their defective hardware products from markets and offered replacements or compensation to their buyers.
3. Standards are what consortia of vendors or standards bodies agree upon. However, the success of any standard depends on the adoption which is reflected in the market share in the face of competition. Standards for hardware change at a slower pace than those for software. This means that new technologies aspiring to be established as standards need to show signs of maturity. Yet, this does not mean that all hardware standards are mature and defect-free.
4. Hardware industry has high entry barriers. For example, semiconductor foundry investments need multi-million dollar investments. This also explains in part why the microprocessor market and the specialized integrated circuit market are concentrated.

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5. Piracy is low, but disputes over co-patents/licenses are common. Designs are usually licensed from the creators, and manufactured by many companies.
6. Hardware vendors usually provide basic programs (firmware) that are required to start the systems but often bundle software. This is many a time the differentiating factor for a hardware vendor. Also, some hardware vendors declare that their hardware is optimized for specific software. Such optimization is brought about by alliances with corresponding software vendors. If such optimization leads to cartelization, with collaborators to unduly scuttle competition, the vendor or cartel can attract ire of governments of various countries.
7. *Ceteris paribus*, branding, power, speed, performance, software bundling and user experience are the major differentiators. Pricing may be based on any of these, but of late form factor, power consumption and many new parameters are playing a role in positioning and pricing.
8. Training requirements are less because of limited opportunities for interactions with users, greater adherence to standards and slower pace of technology changes. Hence there are fewer hardware training institutes than those of Software.
9. Hardware is rarely given free, unlike software. This is because the unit production cost is significant.

Characteristics of Software Market

The software market is peculiar. All software products need an underlying hardware to function. Some of the characteristics of the software market are as follows:

1. It is a market where, despite their products being defective, vendors nearly get away without any liability. This is not a practice to be followed, but of late it appears that the overall quality of software products seems to be improving with time.
2. It is a highly fragmented market, with vendors constantly trying to make standards of their niche products to gain market share.
3. Most software is still proprietary, despite talk, and evolution of new interoperable standards almost every other day.
4. Evolution of the software market has shown that applications tend to grow bigger with time, even for marginal improvement in features or quality. This means that more computing power is required to run these applications. Thus, inefficient software creates a market for more powerful hardware.
5. The software industry has very low entry barriers. Empirically speaking, this has resulted in more software vendors than hardware vendors. This also explains partly the plethora of proprietary software and self-styled standards.

6. The incremental cost of replicating a software product is minimal. Software used in the Small Office Home Office (SOHO) segment goes almost untraced in many countries. Hence, piracy is rampant in all countries where fear of law is low.
7. The plethora of vendors in the software market necessitates the need for quick updates/upgrades of the product, as not doing so may result in the vendor losing the market share to competitors. Thus, product re-engineering, new releases, patches to fix bugs and upgrades are frequent.
8. The software pricing structure may be based on the underlying hardware, number of users, usage period, network configuration or any combination of these factors.
9. The fragmented software market also spawns the need for diverse training. The frequency of software upgrades also compounds the need for repetitive training. Thus, software training requirements are high and the training market is big
10. Some software products are free, very much unlike any other product in any industry.

Characteristics of Device Market

The market for personal information devices is very interesting in many aspects. It is in this market that the aesthetic aspects of the device matter as much as the technology itself. Some of the characteristics of the device market are as follows:

1. The market is highly fragmented where vendors — from handheld computer makers to mobile telephone manufacturers — compete.
2. The costs of research and development are very high—so companies across industries co-develop and/or co-patent the product to share the burden.
3. Products with functionality bugs can cost a fortune if recalled. For example, recalling and replacement of defective batteries in mobile phones of various brands has cost these vendors large sums of money and has attracted bad publicity.
4. Standards may not exist and consortia may struggle to establish them.
5. Piracy of intellectual property seems low, or at least not conspicuous, but disputes over co-patents/licenses are common.
6. The ever changing fads of consumers, coupled with immature technologies, result in too many “intermediary” products i.e. products without a clear technology/service upgrade road map. Thus, if a technology used in a product fails to establish itself as a standard, then the buyer ends up with something that is incompatible with other contemporary and future devices.
7. Personal information devices usually have a temporary “elite” value. So, a model that is popular, or makes a statement in the market today may not be “hot” tomorrow.

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8. Very low success rate of products as a consequence of immature technologies and myopic nature of the creators. A personal information device that provides all features with established technology and conforms to all standards may still be a mirage.
9. The pricing structure is usually based on features, number of units etc; personal information devices are usually very expensive owing to their “flaunt” value during novelty.

What is Happening in Hardware Space?

Whether it is creation, transmission or storage of information, the analog format is passé; digital has long established itself as the preferred data format for processing and storage, irrespective of the format of data acquisition.

The trends in the early part of this decade indicate that Reduced Instruction Set Computing (RISC) is fading away. The price of Complete Instruction Set Computing (CISC) microprocessors is decreasing, and has far exceeded the price-to-performance ratio of RISC microprocessors. The total cost of ownership of CISC-based computers has proved to be far lower than that of RISC computers. Thus, RISC-based computers have become less preferred, and companies producing them have slowly moved towards CISC. Sun Microsystems and SGI are examples of such a phenomenon. In the long run, RISC computers may become museum pieces. Microprocessor performance has become established as the priority of producers, but innovation seems to be happening at a slower pace than that of software. The definition of computers seems blurred, with a variety of computing devices viz, organizers, palmtops, handheld tablets, pocket PCs, mobile phones — demonstrating increasing computing capability.

The computing power and capacity of the PC is increasing continuously. Multimedia storage standards still don't have a clear leader. At first it was the Compact Disc (CD), then came the Digital Versatile Disc (DVD) with a host of formats (+R, -R, RAM, ROM, +RW, -RW). And even before DVD has got established, there was a war between the High Density DVD (HD-DVD) and BluRay disc. The BluRay disc competed with the HD-DVD format in the portable storage market. This divide initially led to the segregation of the content creators such as movie studios, which aligned themselves with one of the two formats for releasing movies. Meanwhile, there were efforts underway to create players (and eventually writers) that can play content stored in either format. Such a variety of formats may create confusion in the mind of the buyer, and may have come in the way of the PC being adopted as a consumer appliance. However, the DVD war finally ended when Toshiba announced the withdrawal of its HD-DVD format, finally making way for BluRay.

Computing hardware has made inroads into civilian transportation too, creating a new field called Telematics. Information devices in automobiles —

like the General Motor's OnStar — help better performance, transportation management and buyer support.

What is Happening in Software Space?

The software market is highly fragmented, to say the least. Yet, like other markets that show maturity with consolidation, the market for Operating Systems (OS) is converging into two main streams — the open source, and the licensed software. In the application development market, it is largely J2EE versus .Net. And so is the case with mobile devices J2ME versus .Net

The phenomenon of software vendors creating many redundant, valueless standards continues. Older software and communication standards are being upgraded only incrementally. This is happening due to their eagerness to push new standards and products. Software vendors collaborate with hardware vendors to force the market to use the latest combinations.

Free and liberal open source software (earlier called FLOSS, now FOSS) is gaining momentum. Commercial and home consumers are seriously looking at freeware to reduce the cost. However, the doubt whether priced software has more benefits than freeware continues to bug them. Vendors too seem to be in a dilemma whether to give their software away free and earn in some other way, or price it. The examples are abundant — IBM, Sun, Oracle, Network Associates and many others.

Enterprising software vendors are expanding their product offerings to address more than one market. For this, they are either building more capabilities into their products, or buying companies whose products fit into the gaps in the IT solution space that they address. In the process, they are creating software stacks. The examples are plenty: IBM, Sun Microsystems, Oracle, Microsoft, Novell, webMethods, and many others. Thus, the stack story is available with every vendor, but the real differentiator that gives buyers additional value seems difficult to communicate to the customers.

Software As A Service (SAAS) is the new buzzword in town. Simply put, it offers software infrastructure and maintenance as a hosted service to the buyers. The buyer incurs lower cost due to shared infrastructure (with other buyers) and the vendor benefits from economies of scale and lock-in with the buyers.

What is Happening in Telecommunication Space?

Mobile phones have transformed to devices that do more than what phones do. The boom in the mobile telecom market across continents has increased dependence on Application Specific Integrated Circuits (ASIC), thus creating a huge market for the latter.

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In the data communication space, VoIP is making a comeback. Multiple modes of accessing the Internet, like dial-up, ISDN, wireless and cable are available. However, the promise of low-cost access using TV cable (CATV) is yet to be fulfilled. This is because the last mile operators are not well equipped in countries like India, and the standards are not well established.

GPS is increasingly becoming prominent as telematics is likely to play a greater role in transportation management. This trend may further spur the demand for integrated circuits and bandwidth. Albeit these days bandwidth seems to be available on demand, the price has not decreased substantially in many parts of the world.

The hype surrounding the third generation telecommunication networks is still to become a reality. Mobile phone operators who sunk huge investments in the later part of the 1990 decade (an estimated sum of US\$600 billion for licenses and equipment) now seem to be on their way to recovery. With the opening up of the telecom market in India, and the push of the telecom service providers towards offering broadband services, bandwidth no longer seems to be a problem. Has the proliferation of broadband in India created opportunities for Internet Protocol based television broadcasting (IPTV)? It has indeed, with many telecommunication service providers also acting as TV broadcast intermediaries.

Questions

1. Do you think the world may go “unwired” i.e., all communication devices may be wireless in future? If yes, what are the reasons that make you believe so?
2. Is the hardware products industry moving towards devices? If so, why?
3. Is the software products industry moving towards hardware-embedded sale, instead of selling individual and independent products?
4. What factors can make Linux succeed in the mobile market? Will mobile phones follow the MOTOMING in adopting Linux?
5. Do you think paid desktop office products such as Microsoft Office face the threat of extinction in the wake of availability of office suites as a service on the web, such as Google Docs and Google Spreadsheets? What can be the technology hurdles in marketing such a service? Will there be any business hurdles and, if yes, what can they be?

CLASSIFICATION OF INFORMATION TECHNOLOGY SERVICES MARKET

The objective of this chapter is to introduce various IT services and to get a complete picture of the IT services market. We will understand the characteristics of these services. Further, we will identify various types of IT services. We will then find out the key requirements of these services and how vendors try to differentiate their services in the market. We will study the various pricing patterns in the market, and identify the multitude of issues associated with buyers, vendors and sales per se. We will also examine a typical sales cycle in the market.

Characteristics of IT Services

As in any other service area, IT services too are immensely interactive. However, unlike many other services, the service provider and the service consumer in IT need not be physically meeting, and the interaction can be through telecommunication networks and the Internet. The skills required for providing the services are diverse, even if the service provider clearly defines the services market space. In some areas like software application development and management, the differentiators are limited to assets like brand and certification from independent industry bodies.

As IT services depend on the service personnel, the quality of delivery is varied, despite many standards and processes that companies adopt. Often, the skills of the service personnel are the core assets, these skills being priced based on the duration of service provision. In effect, billing these services to the client is essential for the revenue of the service provider. Since IT services require large human resources (partly contrary to the belief that automation reduces labor dependency), the size of the service provider matters significantly to compete in the market. There are IT buyers that specify the minimum size of the service provider in their vendor selection criteria, as size may determine the immediate availability of service. This is in contrast to the IT products

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companies where a small team of engineers can develop a high value product, notwithstanding the size of the company; yet to sell such a product, after-sales support may be dependent on the size of the support team and its spread around the globe.

Types of IT Services

The IT services market is vast and its reach is global. Geography of the buyers and sellers is rarely a barrier for IT services, and the services are provided from various points on the globe round the clock. Some of the service segments in IT are discussed below.

IT Consulting

The terms consulting and consultants are most misused in the IT industry. In the software industry parlance of some countries, consulting means providing staff augmentation of engineers, and a consultant means a contract engineer. However, in the context of this chapter, we will understand that consulting means the work of studying a business situation, analyzing the data, exploring solution alternatives and reporting the best suited solution to the buyer, the implementation of the suggested solution may not necessarily be the responsibility of the consultant. In the IT field, companies can consult their customers on the IT strategy and IT road map to adopt for business requirements, analyze the customer's business processes, and suggest a suitable technology for automation and increasing operational efficiency. IT consulting can encompass the identification of IT vendors and evaluation of the products and services available in the market. In many cases, consulting companies (or individuals) involved in evaluation are forbidden from offering their products and services in subsequent stages of business to avoid conflict of interests. For example, a consultant may have expertise in a specific technology; during the consulting engagement, this consultant may suggest the buyer only this technology, with the view of getting the implementation business as well, even if there may be better technology alternatives that may suit the buyer better. In product space, consulting can be in the areas of product re-engineering and definition of road map for multi-generation products. Consulting can also be in the areas of information security management, information risk assessment, planning for business continuity, and disaster recovery. Such consulting services are in great demand since the September 11 incident, as companies have experienced the business implications of disasters and incurred associated opportunity costs.

Hardware-related

Hardware-related services have a variety of service lines. They include professional services like installation, configuration and trouble-shooting of hardware systems (such services may be incident or event based). Companies also offer hardware design services like the design of Integrated Circuits (ICs),

processors, boards, adapters, system add-on cards, peripherals and other products. Such design work may be typically performed by software service vendors that have the necessary skills. There are also meta-service vendors who provide independent verification and validation (IV&V) services to check and validate the designs provided by other vendors.

System Integration (SI) services comprise a large part of the hardware-related services market. SI includes installation and configuration of computer systems, data acquisition equipment, networks, and telecommunication devices. Usually, system integrators are vendor-independent, have alliances with multiple vendors, and play a crucial role in the sales and distribution channel of hardware manufacturers.

Testing of hardware is a specialized field, and there are umpteen vendors that offer testing services. Hardware testing services are offered to manufacturers and not end users.

Maintenance of hardware equipment is a well-established business. Typically, such services are structured as annual maintenance contracts — the buyer pays the service vendor a fixed sum per annum; in return, the vendor offers repair and replacement of equipment as per the terms of contract. These services are governed by the terms specified under the Service Level Agreements (SLAs).

Software Development

The software services market is huge, and is worth a few billion dollars. Like the hardware-related services market, the software market too has a variety of services — some special, and many generic. These services include product professional services, application design, development, testing, IV&V, maintenance, and last, but not the least — staff augmentation. A big part of the software services market is customization, application development, and software maintenance. Engineers hired on contract from vendors (staff augmentation) are employed to develop or maintain software applications and databases.

Infrastructure Maintenance

Technology infrastructure is the core without which many businesses cease to function. Providing telecommunication services is one such area where large companies operate. Data communication is conducted through undersea cables, satellites and other long distance physical networks. Providers of such services often do not directly interact with end users.

Application and Data Hosting

Companies that consider IT as a non-core business function outsource the hosting of their IT. Outsourcing application hosting management may prove more economical than hosting in-house. In the IT services market, there are vendors who provide hosting services for applications, content and multimedia

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on demand. In some cases, the business rules may need to be handled using special protocols like Electronic Data Interchange (EDI). Vendors of such special services are called Value Added Network (VAN) providers.

The new trend in hosting services is to offer software applications as services. The vendor hosts a common infrastructure and the buyers enjoy the benefit of not investing but sharing fixed costs by paying rentals, typically every month. This model is called Software-As-A-Service (SAAS).

Information Security

Until recently, information security was a specialized area. It has now become an integral part of the IT strategy of every company that considers IT to be a critical business asset and tool. With information security becoming critical to business, the role of IT security service providers has gained importance across industries. Information security service vendors conduct ethical hacking of buyer networks, vulnerability analysis, information security audits, intrusion detection, and various other services. There are bodies that certify professionals for conducting information security audits. They also plan for disaster recovery, business continuity management, conduct remote diagnostics and take preventive maintenance measures.

Quality Audit and Assurance

Software quality is an area that many buyers are skeptical about. In the early stages of the software services industry, tracking the quality of vendors was very difficult. Hence, independent bodies like the Software Engineering Institute (under Carnegie Mellon University, USA) developed quality models like the Capability Maturity Model for assessing the quality of software deliverables. Further, a market for services such as quality consulting, quality assessment and quality training evolved. An example of such a quality consulting service vendor is the Quality Assurance Institute.

Usability

There are specialized companies that advise hardware, software and device vendors on the usability aspects of products like the design of User Interface (UI). These companies get involved with product creators right at the product development stage. Often, the creators develop the product and send it to UI assessment consultants who then test the product for user-friendly aspects. Some vendors prefer to call the UI & Usability study as Human-Machine Interface (HMI) study.

Software Training

Software training is a big business, with buyers ranging from common users to IT developers. The training market continues to grow because of evolution of new standards, upgrades on products, and umpteen other reasons. Regular corporate technology training is common in IT services companies since their

survival depends on the availability of latest skill sets. Training end users on software usage is big business too since many end users may not be conversant with usage of different technologies. Apart from the above, industry-specific training is common. It is a regular practice in many companies to train their employees on custom applications used in-house. Enterprise software training (SAP, SalesLogix ...) is a high skill and high cost training since the trainers need to know the enterprise software as well as the domain. Training of technical support personnel is the key to the success of many businesses as these personnel need to be experts in maintaining the mission critical IT systems.

Hardware Training

Like in the case of the software industry, the hardware industry too has training for technologists, support personnel and end users. However, the number of hardware training vendors is less than that of software training vendors for reasons like limited room for customization and repair. It is also important to note that hardware products are generally more reliable than software products and, as a consequence, the support requirements are lower. The other factor that contributes for fewer hardware training institutes is the adherence of vendors to standards, across the hardware industry.

Localization

Localization (L10n) is the generic term used to describe the enabling the IT products and services for use in non-English markets. L10n is a subset of Globalization (G11n) which also includes engineering aspects namely Internationalization (I18n). I18n and L10n are not concepts brought about by IT; they were in use in other industries as well, in the form of customization or compliance with local standards of the target country's markets. Some companies are sensitive to the various dialects of English as well — UK, US, India, International etc. Nevertheless, the generic term holds good for practical use. When the product is “globalized”, user interfaces such as Graphical User Interfaces (GUIs), documentation, audio, video, dashboards and the marketing material have to be localized. There are vendors such as Symbio¹, L10nBridge², SDL³ and others that provide localization service. These vendors assist organizations in meeting the various L10n requirements and offer reviews and IV&V. There are L10n training vendors such as Lingoport that train companies to produce localized products and services. Lingoport⁴ also markets its product called Globalyzer that assists in I18n engineering.

Intellectual Property (IP) Research and Patenting

Patenting of any product (not necessarily IT), follows the rule of prior art. Yet, to begin with the patenting task, the innovator may not know whether his/her innovation is first or not. Hence the innovator may look up country-specific patent authority websites, free databases and paid databases to ascertain prior

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art. Examples of such databases are Delphion⁵, Dialog⁶ and Micropatent⁷. Any individual or entity may outsource patent research to vendors of such services. Typically, large corporations have in-house patent research teams while smaller companies outsource the research. Though they are not necessarily IT services companies, their services are obtained by many IT companies. Since IT companies have a greater tendency to patent than those in other industries, the IP research companies in a way qualify to be called IT service providers.

Documentation and Related Services

Many companies and individuals (freelancers) offer documentation service. This service includes documenting the features and uses (technical documentation) of the product or service, as well as creation of marketing material. Technical documentation includes user guide, administrator guide, configuration guide, support manual, trouble-shooting guide, and such literature. Marketing communication material includes release notes, buyer's guide, white papers and such literature. More details are discussed in the chapter on pre-sales. Documentation may also include usability testing such as key-stroking where the operations described in technical documents are followed step by step to ascertain the accuracy of the documentation.

Common Requirements for IT Service Vendors

Relationship with Original Equipment Manufacturers (OEMs)/product vendors are key for operations as well as competitive advantage. This is because alliance partners get to preview the products ahead of others in the market and develop skills in advance. Alliances can be for any aspect of sales, support, customization, training, usability and co-development.

Vendors should also have risk assessment capabilities while configuring IT solutions, especially since the products tend to be proprietary in nature despite all the talk on standards. SIs stand a greater risk of working with incompatible products and earning the wrath of the buyers. SIs also need to have diverse skill sets to meet the varied market demand.

Vendors need to have adequate resources to meet the Quality of Service (QoS) specified in the SLA with the buyers. A strong process orientation is necessary to identify problem areas and to develop solutions. Vendors should have identified best practices, and maintain archives of the earlier cases for speedy resolution of the problem at hand.

Vendors should have good program management capabilities to coordinate projects involving other vendors, as well as multiple entities in the buyer organization across countries. Infrastructure is a key requirement since engineers need to test their solutions in-house before trying the same at the buyer's premises. Buyers generally do not like vendor engineers experimenting at their premises and expect them to be experts at trouble-shooting.

From the sales perspective, vendors need to have multiple pricing schemes for varied requirements, and marketing collaterals to advertise their services.

Vendor Requirements for IT Consulting

For IT consulting, the primary requirement is ample experience in the IT industry. However, IT experience may not be able to take the consultants far — a thorough understanding of the buyer's domain is absolutely necessary. Like in any business, strong communication skill is a prerequisite. In the IT industry, like the product life cycles, the life cycles of companies too are short. Owing to the high rate of failure of products in the IT market, the innovators fail. There is also the added issue of inter-operability — compatibility of various IT products to work together for supporting a business function. Hence, the consultants need to have knowledge of products appropriate to address the buyer's business needs, and the knowledge of those product vendors that are likely to stand the test of time. Structured information archives in the consulting companies can come in handy while evaluating solution alternatives for the buyer. Buyers are keen not on IT, but on the profits or savings that IT produces. Hence, a true IT consultant should always work towards increasing the buyer's financial benefits.

Vendor Requirements for Offering Software/Hardware Services

Service vendors in the area of IT should be prepared for one constant thing in business, and that is, *change*. Standards keep displacing one another, paving way for new products and newer integration services. Service vendors should develop a sound understanding of the software/hardware product stacks offered by various product vendors. Engineers of the vendors can be billed to client only if they possess the skills appropriate to the client's requirements. Vendors constantly try to avoid the risk of non-billing by training engineers on multiple technologies and new versions of the platforms and tools. This puts intense pressure on the engineers going through a cycle of learning, unlearning and subsequent re-learning.

Service Vendor Differentiators

As in many other markets, brand plays a significant role in differentiating vendors. Branding also helps in attracting and retaining engineers. Some reputed IT companies keep the employee cost lower by paying less than the ruling market price owing to the brand premium associated with their companies.

Pricing patterns play a key differentiating role in more than one way. Some vendors offer services with buyer-friendly pricing structures. They also show

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buyer benefits of offshoring (outsourcing application and related services from vendors in low cost countries), and annual cost improvement due to skill improvement. However, true productivity improvement and resulting cost improvement are difficult to forecast at the time of outsourcing.

Solution alternatives can be used as differentiators when the buyer is well informed and is interested in identifying the solution addresses the business requirement well. Solution alternatives speak of the capabilities and expertise of the vendors. The alternatives also assist in buyer's decision making, due to risk appetite and budget constraints.

Domain expertise works as a differentiator when the industry of the buyer depends on proprietary technology and proprietary business processes. The transformation of big consulting companies into software service vendors can be traced to their domain knowledge in various industries. Such vendors also claim a premium in their consultant billing rates.

Stories on methodologies (project management, program management, risk mitigation...) work as soft differentiators, but may not add much value in winning the bids. This is because the buyers are interested in the deliverable, and may not be as much in the process. Some IT vendors try to bill their Software Quality Analysts (SQAs) to buyers while implementing projects. If vendors make claims about their methodologies and processes, buyers refuse to pay for the SQAs, saying, "If your methodologies and processes are so robust, why do you need the SQA to deliver good quality service? Or, is your deliverable of low quality that it needs SQA involvement?" Certification from industry bodies like SEI and others helps to some extent in assuring the buyer that the vendor will adhere to certain basic service standards.

"Time to market" is a certain service differentiator across industries, including IT. In the context of outsourcing of IT services, "time to market" means how soon can the vendor own and start delivering the IT service from the date the buyer signs the outsourcing contract with the vendor. Reduction in time to market is achieved in various ways, like global delivery centers working in different countries (follow the Sun), reduced transition time (from buyer's in-house IT team to vendor's IT team), buy-out of buyer's IT team (resulting in zero transition time), use of tools, and by other means.

Infrastructure is a differentiator in a limited sense. This is because the vendor's infrastructure has become a necessity, and less of a distinction. Hence, availability of good infrastructure assists the vendor in not getting eliminated in the initial rounds of purchase negotiations. Buyers visiting the premises of IT services vendors in India is a very common sight.

Proofs of Concepts (PoCs) are differentiators that demonstrate to the buyers that the vendor is willing to go the extra mile in understanding and implementing their business needs. However, prototypes and PoCs cost the vendor, and very few buyers may be willing to share these costs. PoCs are

definite means to establish the feasibility of using a technology for achieving a business purpose, and to establish the vendor's technical expertise.

Issues with Buyers

Buyers of IT services pose a variety of challenges to the vendors. Predominant among them is their ignorance, and lack of clarity about their requirements. Unnecessary wastage of effort is incurred if the requirements change during the engagement. Some buyers get into sourcing of business-to-business applications without assessing the IT readiness of their trading partners. Buyers may often be skeptical of the returns on their investments, especially since the product/solution failure rate is very high in IT. Buyers often get lost in the clutter of technologies and associated buzzwords. Supporting custom developed applications is a nightmare, especially if the technology used is heterogeneous; the complexity increases exponentially when the technology employed has become obsolete as necessary skills are hard to find in the market. Even with the availability of standards bodies such as SEI, ISO and others, buyers find it difficult to assess the service vendors. Such certifications assess the processes adopted among service providers but do not in any way guarantee the quality of the final deliverable, as the quality is often dependent on the members of the project team. The IT service quality seems intangible; buyers find it difficult to assess while vendors find it difficult both to deliver and to quantify.

Issues with Vendors

The common complaint about IT vendors is their lack of true value proposition. Vendors may provide sub-optimal service which may call for increased buyer investments. The sales staff may not be very technology aware. Typically, global IT projects are won based on low price (among competing vendors), and the winning vendor internally puts such projects on reverse auction within its subsidiaries across the globe. The subsidiary that quotes the least price again wins the bid and struggles to deliver, facing cost overruns, schedule overruns, or both. Vendors too are often not clear on buyer requirements and end up providing inappropriate solutions. They are also dependent on the products whose quality may be poor, yet are blamed for the deficiencies in the solutions built on such faulty products. Based on any prior bad experience, some vendors become too risk averse and over-price the engagements.

Apart from the changes in technical standards, the industry standards (such as HIPAA, EDI, RosettaNet) also change (though not as frequently), adding to the miseries of the vendor. Another dimension of complexity is brought in by the distributed deployment of applications across the globe, with the vendor having to adopt country-specific standards and requirements. Supporting such applications too becomes immensely complex, and can lead to high failure rate.

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Since all the competing vendors may not have the same technical and domain skills, some vendors may underestimate the engagement or assess the requirements inappropriately; such wrong solutions definitely lead to situations that may be detrimental to the buyer's business.

Typical IT Service Engagement

A typical IT service engagement may have some or all of the following steps, not necessarily in the same order.

1. Introduction of vendor company, if required
2. Vendor presentation on the product/service
3. Short listing of vendors
4. Identification of business requirements, often in software
5. PoC development by vendor (paid/free)
6. Vendor proposal and corresponding presentation
7. Buyer reference check
8. Negotiation on plans, risks, resources, SLAs, etc.
9. Reverse auction of engagement with short listed vendors
10. Purchase order on the winning vendor
11. Vendor's reverse auction among its subsidiaries
12. Vendor's internal transfer of engagement to the winning subsidiary
13. Delivery
14. Continuing support
15. Sign-off

Issues in Sales of IT Services

As in other industries, the IT industry too encounters issues in sales. The issues widen or increase during bad times. Big ticket investments get shelved first — buyers tend to extract more business benefits out of existing IT assets, instead of investing afresh. Hence, sales cycles get prolonged and become painful. Buyers ask vendors to provide PoCs and pilot projects for free, citing management pressures and diligence. Sometimes IT service vendors may ask IT product vendors to provide demonstrations and presentations just to keep their staff busy.

Sales staff may tend to overstate (non-existent) opportunities. They may press delivery managers for freebies such as PoCs and prototypes. Sales staff of service vendors may pressurize delivery managers for reduction in effort estimates in the proposals. Since the IT services market primarily depends on employees, there is intense billing pressure and bill-ability becomes an important criterion for employees from getting retrenched.

Notes

1. <http://www.symbio-group.com>
2. <http://www.lionbridge.com>
3. <http://www.sdl.com>
4. <http://www.lingoport.com>
5. <http://www.delphion.com>
6. <http://www.dialog.com>
7. <http://www.micropat.com>
8. <http://www.eds.com>
9. <http://www.csc.com>
10. <http://www.wipro.com>
11. <http://www.infy.com>
12. <http://www.tcs.com>
13. <http://www.satyam.com>

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Questions

1. How do you classify companies such as Yahoo and Google? Are they hosting service providers/search service providers/information providers/SAAS providers?
2. Is it be possible to offer IT every product as a service? Is Google Docs an example of SAAS?
3. Software service vendors such as IBM, Accenture, EDS⁸, CSC⁹, Wipro¹⁰, Infosys¹¹, TCS¹², Satyam¹³ and many others have the India delivery centers and the India offshoring story in common. The technology know-how is also similar. So, how can these companies differentiate in their service offerings?
4. Indian software service vendors seem to flaunt SEI CMM and other certifications while the larger foreign vendors do not seem to do so. What may be the reasons for this behaviour?
5. What role does the organization's human resources size play in marketing of software services? Do large buyers necessarily need large vendors?

INFORMATION TECHNOLOGY INTELLECTUAL PROPERTY MARKET

In this chapter, we will discuss the various aspects of marketing IT intellectual property (IP), including the peculiarities associated with this segment of IT market. We will also discuss the requirements that organizations should satisfy for developing IP, and marketing of the same. We will look at skill requirements for IP marketing, gains from IP marketing, and target buyer identification, along with a few examples of IP creators. Finally, we look at some of the road maps for such IP creation companies.

When discussing the market structure, we observed that the IT market can be classified into four categories viz. consulting, products, services and intellectual properties. Of these, the IP market stands out with its very own characteristics and challenges. While others may be big in size, the market for IP is relatively smaller.

What is IP Marketing?

An IP can be a product that has been developed by an individual or a firm for reuse in future. It can be patented in different countries under different laws. Many countries have become signatories in the World Intellectual Property Organization (WIPO) and follow the processes and rules specified therein.

IP marketing is very similar to marketing a product, in terms of the actual entity that is being marketed. However, it is also dissimilar to a product, because this IP “product” is usable, but not self-sufficient like any other product. Since this “product” is not self-sufficient, it is unlikely to be bought by an end user. So, the buyers of IP are naturally other technology companies.

An IP is used to build in more features/utilities into another product or service. So, the demand for IPs usually derives from the product/service that is developed using this IP. Hence, a marketer of IP needs to sell the concept

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around the IP, to explain the various scenarios of its usage. In this perspective too, marketing of IP is dissimilar to the marketing of products.

Licensing of IP

A single IP may be used in multiple products under different scenarios. Such products have their unique pricing schemes in the form of licenses or end-user agreements. Thus evolves the concept of licensing IP. Licensing of an IP is the process by which an owner of an IP grants a few rights to the buyer over the IP for an economic consideration. These rights may be exclusive or otherwise, time-bound/eternal, dependent on the geography and nature of use of the end product, or based on other parameters that the buyer and seller agree upon. Hence, the pricing of IP may be dictated by the licensing terms. Every IP sale involves quite exhaustive licensing work (such as discussions with lawyers that specialize in IP, agreements) that both buyer and seller need to do before the sale; this is a biggest differentiator in the sale process as compared to the sale process of a product sale or a service.

What are the Requirements for any Organization to Develop Marketable IP?

Since we are speaking of IT, technology expertise becomes the primary requirement. This expertise must be both horizontal and vertical. This means that the creator must envision the various scenarios where the IP can be put to economical use and the intricate details of the infrastructure/ecosystem (surrounding products) with which that IP will work. Correspondingly, the creator must set up an infrastructure that is closest to the buyers' ecosystems. This may warrant long and significant investments. The creation of IP may require specialists who can work on specific technologies and domains, as well as generalists who can work on the ecosystem. Creation of IP underscores the necessity of commitment, both from the company and the individual, to work with long creation cycles and deal with initial failures.

What are the Cost Drivers of IP Marketing?

Companies that create and license IP have multiple cost drivers. The primary cost driver is research and development (R&D) which includes the cost of infrastructure, and that of people. As soon as a company decides to create an IP with the objective of patenting it, it should research to find out whether such an IP is already patented (concept of prior art). The cost of this activity is called IP research cost. Some companies outsource this research to third-party research providers. Simultaneously, the company must identify the target market for licensing the IP. So, this company will incur market research cost as any other company may. When the company creates a marketable IP, it may decide to patent the same, and may incur patent filing and legal cost. Many companies outsource their patent research and the process of documentation required for

filing the patent to other companies. The new trend is to offshore this work to companies such as Evalueserve¹ and Brain League². The average cost of sale for an IP per se, can be higher than in product companies.

Organizational Skills for IP Marketing

Understanding how to position an IP is a big challenge in itself. This is because of the sensitive nature of the IP business. Enough disclosure should be made to complete the sale, but care must be taken to avoid any disclosure that will let out the implementation details of the IP itself. This clearly comes in the techno-legal realm. The vendor can mitigate the concern of disclosure by ensuring the buyer signs a Bilateral Non-Disclosure Agreement (BNDA) at the earliest stage in the sales cycle. The skill level of the pre-sales and sales persons must be very high. They must do concept selling as well as demonstrate the IP, without too much disclosure. Such sales persons need to be paid high salaries and hence they drive up the costs. A key challenge in selling an IP is how to demonstrate the concept itself. This demonstration must include details of concept, usage scenarios, technology, ecosystem and licensing terms. Understanding of IP laws is a pre-requisite, since contract enforcement can be a serious challenge in some countries. Various countries and regions have their patent offices with specific laws, such as the UK Patent Office³, the US Patent Office⁴ and the European Patent Office⁵. Owing to all these requirements, it is usually the creator of the IP who sells it too because he/she understands the market needs better and can speak the language of the buyers.

Challenges in Marketing IP

Companies and individuals that are in the business of marketing IP face many challenges that are unique. Some of these challenges are listed below:

1. Creation of the prototype
2. Difficulty in getting highly skilled technologists and sales persons
3. Near absence of retail market
4. Protection of IP rights from attacks such as ripping, hacking, unlicensed use, and unintended use
5. Protection of derivative IP rights
6. Finalizing of licensing terms with sale specific items
7. Valuation and pricing of IP
8. Costs of patent research, patenting, documentation, marketing materials, demonstration, legal — in addition to the cost of creation that includes cost of tools and engineering team
9. Collection of any recurring receivables, if the licensing fee is paid periodically.
10. Long sales cycles

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An interesting brief article on creation and patenting of intellectual property is “Patenting: The Art of Patenting”⁶ by Gururaj B.S, published in the INDUS newsletter of the Society of Technical Communication, India Chapter.

Companies that Can be Target Buyers for IP

Technology product companies often buy IP for implementation in their products. Design companies too buy IP. High technology manufacturers too buy IP in their domain for implementation in their products. Communication companies buy IP to get higher return on their existing assets. Governments around the world buy IP that are of strategic importance — in areas such as communications, information security, auditing, data warehousing etc. Research laboratories buy IP for use in their research, or to improvise. Financial services companies buy IPs that help make their transactions more secure. In most of the cases, the seller of an IP presumes availability of the necessary ecosystem in the buyer’s company. Often IP deals may include customization to meet the buyers’ needs, especially when the vendor does not give modification rights (derivative IP rights) to the buyers. Such deals will have at least two items priced — a royalty for the IP and a one-time fee for customization.

What Gains are Obtained from Marketing of IP?

Creation of an IP, and patenting the same can establish the technology leadership of the creator. This leadership can give sound economic first-mover advantage. The objective of patenting is for the creator to get exclusive economic benefits of the patent for a pre-determined period. Patents can create entry barriers for competition, and also keep them at bay for the period of the validity of the patent. Good IP and licensing can result in recurring revenue for the creator. The intangible benefits of creation of IPs are the respect that the company can command in the market, as well as confidence to graduate to the development of complete products. However, companies may need to remain very cautious and market IP when good opportunities come by, as IPs tend to have very short life span, unlike multi-generation products, and may lose their economic relevance due to progress in technology.

Who Sells IP?

IT IPs are sold by individuals as well as companies. It is very common to find individuals creating add-ons on retail products created by vendors such as Adobe, Microsoft and other software vendors. Such companies also provide a platform for these individuals to sell their IP, because they extend the

capabilities of the products. They are not independent products in their own right (as discussed earlier), but work along with the full-fledged products available in the market. This is one case where IPs are sold in the retail market. It is common knowledge that product companies file many patent applications and register patents, but rarely monetize them. Then there are other companies that focus significantly on IP creation and sell them. Examples of such companies are:

- Dolby⁷ — digital sound processing software
- Global IP Sound⁸ — software for voice communication on the Internet (VoIP). Its buyers include well known companies such as Skype (now part of eBay⁹) and Google¹⁰ (uses in Google Talk)
- Equaria Technologies¹¹ — Java modules for e-commerce trading communities
- DivX, Inc.¹² — creates and markets full-fledged media editors, media-type converters and media players. It also creates and markets codecs that work with other media players from companies such as Microsoft and RealNetworks.

A Note on the Life Cycle of Companies that Market IP

It is very difficult for companies to survive on marketing of IP alone. This is because IP creation companies have to be working on cutting-edge technologies which often have very high failure rate. Also, software business is highly fragmented and the standards keep changing so often before they can be called as standards. So, it appears natural for these companies to sell their IP — lock, stock and barrel — and move on to other businesses. Many companies diversify their risks by moving on to services, while others extend their IPs to create full-fledged products. Moving into the products' market will require greater commitment (to keep the product alive with newer versions over time) and greater investments (to sell globally).

Do IPs Help in IT Services Marketing?

It is very common in the IT services industry for vendors to create Proofs of Concepts (PoCs) to convince their buyers. These PoCs are definitely IPs, but are likely to be very customized to the prospective buyer's requirements and not necessarily as generic as IPs used in products. Service companies use reusable artifacts such as frameworks, design and software to create these PoCs. These PoCs reflect the capabilities of the vendors and assist buyers to decide on outsourcing. It should be noted that these PoCs may not be paid for by the buyers, but they definitely improve the probability of the service provider (that provided the PoC) winning the contract.

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Notes

1. <http://www.evalueserve.com>
2. <http://www.brainleague.com>
3. <http://www.patent.gov.uk>
4. <http://www.uspto.gov>
5. <http://www.european-patent-office.org>
6. <http://www.stc-india.org/indus/tech-write.html>
7. <http://www.dolby.com>
8. <http://www.globalipsound.com>
9. <http://www.ebay.com>
10. <http://www.google.com>
11. The website could not be found — probably the company ceases to exist under this name.
12. <http://www.divx.com>

Questions

1. How can the issue of non-disclosure be addressed while marketing IPs? Is a BNDA sufficient?
2. Does patenting make any difference in marketing an IP? What precautions must the vendor take while marketing an IP that is not patented?
3. Is patenting of products prior to their marketing necessary?
4. What are the ways to offer IP as services?
5. How is marketing of IP different than that of an IT service?
6. Does the Internet play any role in the marketing of IPs?

PART II

FINANCIAL ASPECTS OF INFORMATION TECHNOLOGY MARKETING

- 5** Total Cost of Information Technology Ownership
- 6** Pricing of Information Technology Products and Services
- 7** Free Software — What is this Freedom?

TOTAL COST OF INFORMATION TECHNOLOGY OWNERSHIP

Companies need to invest and reinvest in IT for survival and growth. Companies, especially the public listed ones, are intensely focused on short term profits. This can make them myopic in their investment decisions, especially those related to IT. Technology investments are usually big ticket high risk propositions and decision makers naturally tend to choose low risk quick fix paths. It may be appropriate for companies to take a long term approach to procuring IT, considering the total cost of ownership, over the estimated period of use. How does the understanding of buyer's IT costs help an IT vendor? In many ways: the vendor can propose IT solutions best suited for buyer's budget; the vendor can propose suitable pricing structure and payment scheme.

Since the concept of Total Cost of Ownership (TCO) was developed, the market has been flooded with literature on TCO and many mathematical models have been developed to quantify the same. This chapter aims to discuss various qualitative aspects of TCO and cost drivers of IT ownership.

Usage of IT in organizations is a continuum, with older systems being replaced by new ones. This means that the usage of IT goes through cycles of retiring old systems, adoption of new systems, unlearning of old systems, learning of new systems, using the adopted systems and retiring the same, to introduce newer technologies.

Let us start with the phase of retiring old technology.

Exit Costs of IT

There are many costs incurred by organizations in retiring any old IT system. Most of these costs may go unnoticed by managers responsible for technology exit decisions.

The cost of decommissioning old technology is big. The system down-time for decommissioning the old systems can bring the organization's processes to

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a halt. This affects business directly and as a chain reaction, increases the opportunity cost of lost business.

The cost of unlearning old IT by users is a psychological cost. Users accustomed to old systems take a long time to unlearn. Even organizations working in the area of IT find it difficult to convince users to unlearn old systems and re-train with new ones.

Another cost incurred by organizations is the cost of the systems going out of sync. In large organizations it is possible that some departments may have retired the old system, while other departments may still be working with the old one. This happens because the process of retiring old systems is prolonged owing to business process dependencies and regulatory requirements, and all departments may not be able to decommission simultaneously. For example, the Purchase Department may not require historical data older than a few years whereas the Finance Department may compulsorily need to preserve historical data for the number of years specified by government regulation.

There are many other costs that organizations may incur while decommissioning old systems. Such costs may include unforeseen delay by the department, or the contractor responsible for decommissioning (and migrating to new ones), damages occurring during the process, premium price paid for old skill sets required in decommissioning, and others.

Dilemma While Retiring Old IT

Organizations face a lot of questions while retiring old IT systems. The first and foremost being, “Can the older system work for some more time?” The old American adage says, “when it aint broke, don’t fix”. It isn’t that simple. The thumb rule to use to assess the need is: whether the organization is losing significantly due to the old system, and whether adopting a new system may provide a significant competitive advantage, after discounting the new system adoption cost.

It may be possible to meet business requirements by incrementally investing to upgrade old systems. In such cases, the exit cost may be nearly zero with the users having to learn only the upgraded parts. This may definitely lower both the predicted and unpredicted costs, provided the upgrade of the technology serves the purpose.

IT outsourcing can be a viable option in situations where IT itself is not the main line of business of the organization. It can reduce a lot of pain if the organization has strong Service Level Agreements (SLAs) with the outsourcing vendor. All said, there is always a valid doubt whether the new IT will live up to its promise. This is because technology systems, especially those like IT, belong to the category of credence goods. The buyer sometimes remains unsure of the benefits of the new technologies and systems even after purchase and usage. It is important that organizations assess the life of a new IT before deciding on

retiring the old IT system. Hence, organizations have to evaluate carefully the real need for retiring any IT system.

Deployment Costs of New IT

Of the costs an organization incurs for new IT, the first is the cost of deployment itself. Of this cost, a major part is the procurement cost of new systems including hardware, software and firmware. In IT, the cost of software could be near zero if the organization chooses free software, typically open source. However, there is more to it. The cost of installation, configuration, customization and deployment of new IT will be incurred anyway; irrespective of whether the deployment is made by in-house staff, or by hiring professional services vendors.

In software, deployment cost may not end with procurement cost and installation cost. Organizations may have to incur costs for application development, integration with other products or customization of the product. Software like ERP cannot be easily implemented in-house without prior experience or suitably skilled staff. The deployment may require business process re-engineering skills. So, the cost of hiring business consultants may be additional. The basic product may require add-on products for some specific functions. The buyer may get to know of the cost of add-on product only after purchasing the base product. For example, in many companies where employees deal with confidential information of their clients, they may need to buy computer encryption software for their laptops and insurance against loss. One may question why does the employer need to buy encryption software if insurance is being bought. Insurance covers for the loss of the computer, but it is important to ensure that the finder of the computer will not be able to view any data. This may be a requirement for regulatory compliance. While IT department may not realize the requirement for encryption software, Finance department may mandate its purchase.

Once the new system is deployed, then comes the cost of training end users. If the new system is more efficient than the old one, a part of, or the full workforce can be retrenched. However, the cost of retrenchment of the workforce may have to be incurred. Other costs due to immature, standby, intermediate, proprietary, or inflexible products may be extra. The vendor may sell off end-of-life products, and this could prove detrimental to the buyer, as there may be little or no support on such products.

Opportunity Costs of New IT Deployment

In IT, at every stage of the life cycle, there are opportunity costs. For example, the product or solution cost itself is an opportunity cost if the organization can use a free software (usually open source), instead of buying a priced product. Often, organizations incur opportunity costs by not procuring standards based

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products. Of the many products available in the market, a few can be deployed faster than the others. Opportunity costs increase with the difficulty of deployment. If a decision on IT outsourcing has been made, then calculating opportunity costs becomes easier; it is just to evaluate costs across vendors. Many products or technologies may carry unnecessary features or utilities and the buyers may pay for them knowingly or unknowingly. There are bundled offers that prompt the buyer to buy unnecessary add-on items, thus increasing costs.

Maintenance Costs of New IT

Maintenance cost of technology/systems is inevitable, irrespective of the industry or user. Periodic contracts like Annual Maintenance Contracts (AMCs) are very common, where the maintenance costs are decided at the time of entering into the contract. The cost of maintaining the facilities is extra. The maintenance costs can include tasks like server maintenance, user life cycle management, application life cycle management, system upgrades (like increasing disk space, increasing memory), allocating user space and administering of patches to software or firmware. Patches represent the quality lacunae of the IT vendors. Hence buyers need to be more and more cautious and must realize the importance of their active participation in IT procurement. Vendors must ensure that they release patches only when they are absolutely necessary and work towards trying to get their wares correct the first time.

Training costs of support personnel are sizable, as training needs to be periodic. Any lapses due to insufficient knowledge in user management (access control and authorization) can wreak havoc in the company, as the system may be prone to hacking or sabotage. In addition, the costs of any physical damage to the systems can be more — in the form of cost of spares, and of service unavailability downtime. Instances of sweepers and facilities maintenance persons breaking connectors or disconnecting the systems out of ignorance are not uncommon. Network operations centers need additional security and monitoring, and they cost extra.

The costs are not far lesser if technical support is outsourced. If the resident support person cannot fix the problem, there is escalation of costs in terms of time, and of lost business. Then there is the cost of overhauling/activity rescheduling due to preventive maintenance.

All IT systems need some form of redundancy at all levels, starting from the power supply. Does the vendor mention the need for uninterrupted power supply while selling the mission critical server? Unlikely, because, the vendor may presume its availability or may not look at the big picture of the buyer's needs. Sometimes the costs of maintaining redundancy may be more than the cost of the system itself. Data records need to be archived and preserved for the sake of organizational needs as well as regulations. Periodically, data needs to be "backed up". This brings in the cost of back-up infrastructure.

Who can foresee the cost incurred due to product vulnerabilities? For example, there are many malicious software in the market that cause harm to the software, hardware, network and websites (such as Internet Information Server), resulting in damage to users. Will the buyer bear the cost of such damage? Or, can the vendor indemnify the loss? The risks have become higher with the integration of Public Service Telephone Networks (phone lines) with Voice Over Internet Protocol (VOIP) network (that connects computers); this can allow the computer risks to spread to phone networks.

Opportunity Costs of New IT Management

There are many opportunity costs incurred during management. The opportunity costs increase if any alternate vendor offers better warranty / guarantee terms. Alternate systems available in the market may have longer mean time between failures (MTBF), or have higher Reliability, Availability and Serviceability (RAS). In case of maintenance contracts, there may be other vendors in the market who charge a lower fee. Opportunity costs are very high while maintaining proprietary systems since the spares also may be proprietary and services may require proprietary skills, and hence priced very high. Some products available in the market may require lesser maintenance, no shutdown or overhaul time, resulting in a smaller window of service unavailability.

Upgrade Costs of IT

The story is similar when companies decide to upgrade their information technology systems. Upgrading support from vendors may call for a different SLA, and may cost more. If newer tools are introduced as a part of upgrading, then the users and system administrators need to be trained at a cost. Upgrades may also call for add-on products. Many other costs from the stages discussed earlier will also continue to be incurred by companies.

Opportunity Costs of IT Upgrades

Upgrading IT is like installing a new system, but in a disruptive way, because the system under upgrade may be in use. This means that most of the opportunity costs that incur during deployment of a new technology incur during upgrading as well. Sometimes outsourcing the upgrading process may be convenient, if the vendor is trusted in delivering good service level.

What Actually Happens?

It sounds interesting to study various costs that buyers incur at various stages of technology usage, and to know the chain reaction that these costs bring about. However, things on the field are even more difficult. The vendors are driven by targets to sell their own products. All vendors are interested parties, i.e., they

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wish to promote their products in the market, irrespective of the merits of the products per se.

The buyers are not naïve either. They are driven by the motto of cutting costs. Hence, most buyers prefer to buy those products or technologies that cost less in the initial stages — like current or next quarter. Investing in a better but high cost technology may not look very attractive on the quarterly results statement. Thus, buyers too are partly responsible for wrong decisions in IT procurement.

Vendors may attempt to hide the weaknesses or demerits of their products. Buyers often do not compare the Strengths, Weaknesses, Opportunities and Threats (SWOT) that a system may bring to their businesses. A long term cost-benefit analysis of candidate products is rarely done.

Some buyers choose vendors based on the comfort feeling — though the system may be proprietary, the vendor may offer good service. Not all buyers may be IT-aware; they may just make wrong purchase decisions believing claims of vendors. Some purchases are through multi-year lock-in agreements between buyers and vendors and the buyer may not be allowed to change the vendor easily.

There are other common hidden reasons for a buyer to choose a particular vendor; the vendor may offer to send the decision maker abroad on a holiday, on the pretext of training, or for showing reference buyers abroad. These will work as incentives to the decision-makers and decision-influencers of the buyer organization.

There are some funny reasons too — like buying systems indiscriminately just to use up the budgeted amount. This is common with government departments. The reasoning is amazing: government will allocate a lower amount for the next period if the current budgeted amount is not completely utilized! The government may believe that lower utilization of funds in the current period means diminished needs in the next period.

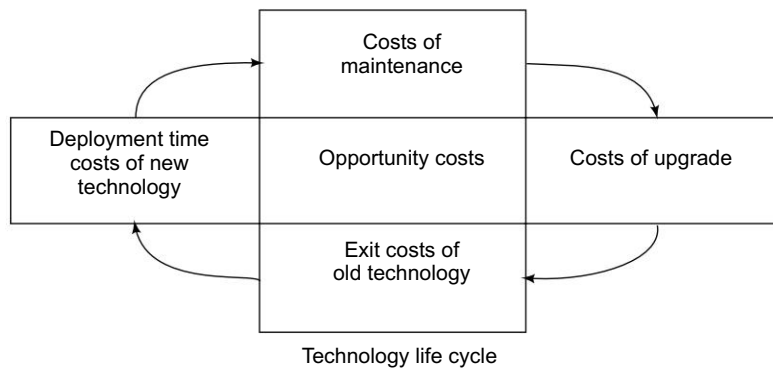
There is another class of buyers: they choose a mix of products to suit needs of different departments and to hedge the vendor-specific IT risks. Often, such buyers can end up with partly or fully incompatible products that fail to serve a complete business process across departments. To make up for the bad purchase decision, the managers embark upon integration projects that require big budgets and may end up spending more than the cost of the products.

If the sales pitch is at the top management level, then the rules of the game are altogether different. A buyer may choose a particular technology or product against deserving others because the vendor sales head and the purchase decision-maker in the buyer organization may have been batch mates in the same B-School. Nepotism too is not uncommon. There may be vested interests, like the buyer being related to the vendor.

Last, but not the least, companies buy because of the TINA factor, i.e., “There Is No Alternative”. Some markets may lack reputed vendors. Some vendors may not be represented in some countries. Some IT may be patented with only one vendor offering products based on those patents. Some governments may black-list some countries and may ban IT exports to those. US restricts many of its national vendors from selling their IT to countries such as Cuba. The reasons can be many.

It may be appropriate to classify the above instances as those with politically determined outcomes.

Summary



IT has direct costs as well as opportunity costs. Companies cannot be overly myopic in making IT purchase decisions. Vendors lose credibility if their products do not deliver, and face punitive action as many IT products may be used in mission-critical applications. IT procurement by companies is driven by factors like quarterly performance, lack of analysis of needs, lack of in-depth study of products available in the market, ignorance and many political factors.

Questions

1. What are the reasons for an IT vendor to understand the cost aspect of the buyer's requirement?
2. What are the ways an IT buyer can safeguard against unforeseen costs?
3. Are IT vendors willing to guarantee no cost-overflow in a turnkey sale?
4. What recourse does an IT buyer have if the cost of IT procurement exceeds the budget, or the contracted amount?
5. Most IT vendors contractually distance themselves from the damages caused by the vulnerabilities in their products. How can IT buyers transfer the cost (or seek refund) in case of damages caused by such vulnerabilities?

PRICING OF INFORMATION TECHNOLOGY PRODUCTS AND SERVICES

Pricing of products and services is a function of many market parameters. Price is not necessarily decided by the vendor. Factors that determine the price of the goods in the market in sales, including products and services, are listed below. The list is only indicative. Note that the pre-sales factors are perceptions while post-sales factors are experiential.

Pre-sales Factors

Price can depend on market factors like vendors, competition in the sellers market, quality of goods, immediacy of need, brand, and planned product roadmap. There are human factors like the following:

- purchase decision makers
- vendor-buyer relationships
- transparency of the purchase process
- prior experience with the vendor, the goods and the buyer
- revenue target of sales persons
- any other pre-sales experience that sets the range for the price.
- size of investment/budget of IT

Post-sales Factors

Post-sales indicators available before the purchase decision play a critical role in the pricing of goods. There are business indicators like credibility of the vendor, expectation on the performance of the product, benefits of available features, costs of usage, costs of maintenance, buyer's willingness to pay outstanding amount after the sale and terms set forth in the SLA. There are also human factors like quality of support personnel for mission-critical goods that greatly influence the price.

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In the IT market, some of the above factors have a higher influence than others. The “Peter Pan instinct” among the IT users sometimes makes the need latest technology fad driven, and not business driven. This makes early adopters pay a premium price for new technologies; the price premium reducing as the technology becomes accepted, mature and near zero as it turns obsolete.

The IT industry, including hardware and software, has an experiential goods market, i.e., users like to experience the goods before they buy. In computer hardware, like PCs and servers, the differentiation is minimal. The performance is a key parameter for evaluation. In such a case, vendors allow the buyer to run benchmark programs on their hardware. This is a part of pre-sales experience.

Reliability, Availability and Serviceability (RAS) factors add to the complexity of purchase decision and command a premium price, though some attributes of RAS may be limited to perception. Servers need administration and contribute to the usage costs. The price may include maintenance in a package deal, with one or two years’ support thrown in to make the deal sweeter for the buyer. For a hardware device like network printer, the cost of administration may be minimal, while support is critical since many users share this common resource, which increases the maintenance price. Hence, reliability can be a key factor in determining the network printer’s total price. In desktop PCs, the users attribute a lot of importance to the ease of upgrading memory and storage space. This means the price can depend on the performance as well as the upgrade options. Such an upgrade factor may be less influential (or in some cases, not influential) in other markets such as consumer durables.

The computer hardware market for standard goods like PCs, servers and peripherals is over-crowded. This leaves little room for vendors to derive a premium price for their goods. Hence, the price is largely determined by the market, or the brand. The expediency of the sales team to achieve sales targets set for the quarter or the year plays a very important role in deciding the price. Often, sales teams show a nonchalant attitude towards pricing, ignoring the dual effects of low price viz., lower revenue and lower profitability. Poorly skilled sales persons usually presume that it is easy to get purchase orders from the buyer if the product is priced low, and often try to send this message to their employer. Hence, most companies find it difficult to enforce profitability targets on the sales force. If the premise that a low price will increase the sales were to be true, then every user will have embraced Free and Open Source Software (FOSS) and priced products will have to cease to exist. In practice, both freeware and priced products co-exist, but lowering the price may not be the best route to ensure sales. On the other hand, excessive focus on profitability may have a negative effect on the market share. This conundrum makes companies to tread the middle path – set a revenue target to the sales team, but determine the sales performance based on the various weights assigned to revenue and profits accrued.

Many users buy IT products for the features that they offer, giving little importance to the thought whether they will use the features or not. Hence, features can be classified as a pre-sales factor while the perceived benefits can be classified as a post-sales factor.

Having got to understand the pricing factors in the IT market, we will understand the peculiarities inherent to this market. Further, we will classify the various pricing structures for IT products and services, and analyze the peculiarities in pricing. We will understand this from the problems posed by, and the consequences of software piracy.

Peculiarities of the IT Market

Many established industries, like manufacturing, have certain characteristics that can be called conventional or long existent. IT is a nascent industry, just about a century old. This market has some characteristics that are queer, unlike that of other industries, and they can impact pricing drastically.

Fragmented Market

The IT market is highly fragmented. Among product vendors, hardware vendors are more standards-oriented than software vendors. However, hardware products follow a plethora of competing standards while software standards are probably as numerous as the products themselves. Every vendor tries to establish one's own technology as a standard (irrespective of the quality), even though it may be aware of the technology's inherent shortcomings. There are some vendors that try to make many such proprietary technologies work together, thereby creating their own standards for "interoperability". Keeping products proprietary can let the vendor command a price premium, as Apple has demonstrated with its many successful products and services. However, the price premium can be short-lived, as proprietary nature can lead to becoming niche resulting in loss of market share. Vendors need to be cautious of this aspect and may need to maintain a good mix of proprietary and interoperable technologies.

Among service providers, some provide infrastructure, some maintenance, some "productized" service, and some staffing. There are meta-service providers who offer their services to the service providers — they are typically in the areas of IT audit, technical training, quality audit, and software skills training, among others.

Expediency

The IT industry is driven by a strong urge to reduce the time to market goods. This expediency is peculiar to this industry, more intense than in any other industry. It makes ever-increasing demand for infrastructure performance,

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constant learning, unlearning and re-learning among users. It produces ever-changing standards, constant innovation to reduce product development time, which may contribute to the development of products that may not have strong road-map and have security loopholes (especially in software). Expediency has the effect of pricing the goods sub-optimal value, because every vendor likes to have a few early accounts, and they can be acquired usually with large discounts. Such discounting or sub-optimal pricing of one product can add to the cost of other product lines making those more expensive. If release cycles of IT are short and frequent, buyers too will be unwilling to buy frequently.

High Failure Rate

This industry suffers from a high product failure rate. This is partly attributable to the expediency factor. Other reasons include creation of products with imaginary demand, creation of products with non-existent utility value, unclearly articulated roadmaps (resulting in incomplete intermediary products to bridge the gap in the map), and difficult-to-use products. Services too are no exception; the failure rate is quite high, since many of them have benefits that cannot be measured, and nothing measured is nothing gained. Cost of failure of one product can increase the overall expenses of the vendor. The vendor tries to recoup this loss by pricing other products high wherever possible.

Concept Selling

Periodically, the IT industry plays host to new fads. These fads can be of quality, standardization, inter-operability and web services, and the industry may hail them as paradigm shifts in computing. There are many quality consultants that market six sigma, zero-defect, and other methodologies. These consultants may illustrate various financial models to show cost savings, but the real savings may remain questionable. Overall, the hardware industry is near zero-defect while a few software vendors continue to swarm their buyers with patches. Defective products increase vendor's cost and thereby product price.

Proprietary Technology

Proprietary technology is rampant in this industry, despite all the talk of standardization. From a vendor's perspective, proprietary technology is great because the buyer can be locked in for a long time and this lock-in can command a long term customer and a price premium. The vendor can also sell add-on products to make one's product interoperable with others in the IT ecosystem. Such proprietary technologies create opportunities for another class of vendors called software system integrators who make these technologies "talk" with one another.

Freeware

This is undoubtedly the biggest peculiarity of the software market. Note that no hardware is given free. However, many software products and a few services are available free-to-use. Near zero incremental production cost of the software product gives great advantage to buyer companies and individual users. Freeware adds a new disruptive dimension to competition in the market.

Billing

If you would like to buy a car, you can see or get details of the various models, their price and their benefits, and finally decide on a model. In the IT industry, it is different: it is difficult to choose an appropriate product as the market is confusing. There are consultants who will bill you to gather your requirements, and evaluate the tools or platforms appropriate for your needs. This is not just an analogy; most activities in the IT life cycle are billable activities. This puts enormous cost on the buyers but provides vendors multiple opportunities to sell their wares.

Piracy

Software piracy is a rampant phenomenon in all countries that do not have strict enforcement of laws. Piracy in the software industry is comparable to the presence of spurious brands that ape reputed ones, like the fake branded goods in the retail industry. We will discuss piracy in detail later in this chapter.

Multiplicity of Costs

In IT, costs of maintenance sometimes outweigh the procurement costs. Costs further shoot up when vendors stop supporting their old products. This is a smart way by which vendors force buyers to buy newer products. How many times does a car manufacturer force a buyer to upgrade? Forced upgrade is a self-fulfilling prophecy of the IT industry. Such upgrades not only create selling opportunities for the original vendor, but also for many others in the IT ecosystem.

Evolving Requirements

Returning to our car analogy, if you need a car, you go and buy a car. In the IT industry, the scenario is different again: if you are an unclear buyer, you explain to the sales person that you need a car, place an order, but change your requirement midway and ask the vendor to deliver you a 4 × 4. In the IT industry the requirements can keep changing even after the project is handed to the vendor; the vendor may have estimated the time and cost of the project depending on the requirements captured initially (need not be the same expressed by the buyer). Some vendors charge extra for incorporating the changes, while the desperate ones absorb these costs and transfer the new burden to the engineering teams.

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Having studied various peculiarities of the IT market, let us now discuss various pricing structures in vogue.

The Structure of Pricing in IT

Periodic Contracts in IT Services

This pricing structure is usually called “Time and Material” (T&M) contract. T&M pricing is prevalent in software services (including hardware design services). The vendor dedicates a team of professionals for the buyer’s work. The size of such a team may be mutually agreed upon and the IT infrastructure may be provided by either party, most often by the buyer. The buyer reserves the right to reduce the team size if the work load reduces during the engagement, and correspondingly pay less to the vendor. The buyer usually pays per unit of work, usually in person-months. The contract between the IT buyer and the vendor is usually quarterly, annual or longer. The buyers get into such a contract in cases where the work is routine, or a specific end date cannot be foreseen. Vendors love this structure, because of guaranteed revenues. Such a contract can be arrived at when the relationship between the vendor and the buyer is strong, and the trust (that the vendor will not unnecessarily stretch the work to bill in excess) is paramount. Since the deliverable usually requires little vendor differentiation, vendors often get replaced, and a low price can be the only deal clincher. Buyers may also ask the vendor to show improvement in productivity for contract renewal. Such a pricing structure is prevalent with system integrators (for maintenance of hardware and software) and infrastructure service providers. Buyers get into T&M contract if the work cannot be easily quantified or the scope is expected to change in the long duration project.

Fixed Price Contracts

Fixed price contracts are typically package deals. The pricing for the project is agreed prior to the commencement of work. In such Fixed Price Projects (FPPs), the scope of work has to be defined well in the contract, and all modifications suggested can be priced extra. The delivery deadlines are strict owing to strong penalty clauses. The schedules are tight since the vendor’s earnings do not increase with the duration of the project — the vendor earns more by delivering on, or ahead of schedule. The buyer relationship dimension has little relevance as cost and time matter more than any other factor.

For example, outsourced product development may be an FPP contract, while support of the product subsequently can be structured as a T&M contract. This is because the buyer may not be able to quantify the product’s support efforts till it is established in the market and put to use. During this period, the contract can be T&M, based on the vendor’s capacity to support. After the product stays in the market for a few months, the buyer can analyze the trend of

support demand and then structure an FP contract for supporting a definite number of end user requests.

Vendors prefer T&M to FPPs since T&M provides more flexibility over FPPs to deliver. However, buyers prefer FPPs to T&M since it pre-determines the cost thereby reducing risks and determining the date of delivery. Also, FPPs are safer to opt in case of unproven technology projects. Small vendors have an edge over large vendors while competing for FPPs since the latter are likely to have larger fixed overheads that tend to make FPP proposals high-priced. FPPs are good if the buyers are sure that their requirements do not change midway and the projects will confine to their original scopes. Buyers prefer FPPs for the simple reason that such contracts limit their expenditure and make their payment more predictable than T&M contracts.

Quality-Based Pricing

In professional services (like implementation of packages, supporting of software), the pricing may be based on the Quality of Service (QoS) parameters, such as level of support and response time and resolution time guaranteed (such guarantees are collectively called as service levels, and hence the phrase Service Level Agreements — SLAs — with the buyers). If the vendor agrees to attend to a fixed number of support requests, then such a pricing structure is said to be incident-based. For example, if the buyer buys a 5-incident pack from the vendor, it means that the buyer can contact the vendor for support for 5 incidents — each incident having one or more issues that the vendor has to resolve.(i.e. the number of incidents having no relation to the number of issues at hand). Suppose the buyer calls up the vendor and reports an incident, the vendor will count the number of incidents as one, even if that incident requires resolving more than one issue.

Size-Based Pricing

Vendors of information security consulting services may price their services based on the number of audits, number of points (assessed for vulnerability), number of reports provided, among others. Such a service is different from T&M or FP, and can vary with the size of the work.

IT training vendors price their training based on the number of trainees, location of training (at their premises or at the buyer's premises), topic of the training, and the level of training (beginner to advanced usage).

Usage-Based Pricing

Pay-per-use pricing structure is well prevalent in IT markets too. This is mostly in services, though the product vendors too seem to lean towards this pricing structure. The usage can be shared network resources, shared services and

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shared infrastructure hosted by a service provider. Contracts are time-bound, with built-in price escalation clauses. Service Level Agreements (SLAs) are strict and are linked to penalty clauses. There are not many differentiators in SLAs. These contracts tend to fetch repeat orders in the form of contract extension or renewal.

Also, in product markets, this structure is gaining popularity. This is due to the fact that many buyers may not prefer to invest in the products at once. The small entry cost for the buyer helps the vendor garner market share early in the product life. Leasing equipment is the popular form of usage based payments, but usually structured as hire-purchase where the lessee is obliged to buy the product at the end of the lease period. Some countries offer tax benefits for lease rentals too.

Build-Operate-Transfer (BOT) Arrangement

In civil engineering projects like those of airports and roads, the vendors not only set up the infrastructure, but also operate it for a while and then hand it over to the governments. A similar arrangement has evolved in the IT industry too. This is relatively a new pricing structure. Build-Operate-Transfer (BOT) agreement is often employed in outsourced product development. The arrangement works as follows: A product company outsources its product development process, retaining its Intellectual Property Rights (IPRs) with itself. The vendor develops the product with a dedicated team of software professionals. Once the product is ready, the product company sells this product, but signs up with the vendor for providing post-sales support. Once the market is established for the product, the product vendor buys the product development team (probably with the infrastructure as well) from the vendor at a pre-determined price.

Contracts in BOT are comprehensive, with multiple exit clauses. These projects are like FPPs, but longer in duration, typically 1–2 years. This is the period often required for development and stabilization of an IT product in the market. The buyer has an option to buy the product development team, in which case the team members will be transferred to the buyer company. This arrangement works like a live-in relationship between the vendor and the buyer. The selling process is difficult and long. Not all vendors like these types of contracts because transfer of the team may be mandatory, resulting in knowledge loss. The changing market landscape however may make vendors willing to part with their employees.

Equity Participation

In some projects, buyers avail goods from vendors, but pay in the form of their company stocks. This mode was popular in dot-com boom time when vendors

hoped that they could make a windfall from the stocks in the buyers' companies. This contract was similar to FPP, but stocks were issued to vendors in lieu of cash. Buyers liked this pricing arrangement because they saved cash while simultaneously transferring their business risks to the vendors. This way, the vendors had an obligation to provide the buyers goods that could enable them to succeed together. Decision makers in such deals were the Venture Capitalists (VCs, that funded the buyer) who were keen on reducing the cash burn rate of the buyer company. Most buyers went bust leaving vendors with stocks not worth the paper they were printed on. This pricing structure was temporarily a hit as it appeared to be a win-win arrangement for VCs, vendors and the buyers. It clicked with sales persons too as they did not have to worry about cash receivables. Eventually, many vendors ended up booking losses; buyers had managed to transfer losses to vendors, in the form of non-performing stocks.

Software

Software has a variety of pricing structures, many of them peculiar to the vendor. Let us discuss some of them here.

Freeware

A few softwares are free to use, under conditions specified as per the license agreement. More on free software is discussed in the chapter "Free software movement".

Size-Based Pricing

A few software products are priced based on the size. Price can be dependent on the number of licenses, number of processors that the underlying hardware has, and similar quantitative parameters. A few software services, such as translation (for localization), are also based on size, with pricing per word (of the source language, often English) translated, per image localized, and per word reviewed. Support centers and business process outsourcing companies too have per-seat pricing, which is the price that the vendor will invoice the buyer, based on the number of agents answering the queries of the buyer's users. If such a service is available round-the-clock (24×7), the pricing will become time-specific, resulting in higher price for agents working night shifts.

Platform-Based Pricing

Pricing can vary, based on the underlying hardware — like Complete Instruction Set Computing (CISC) processor, or Reduced Instruction Set Computing (RISC) processor, or based on the operating system. A few vendors however give OS independent pricing. A few database vendors follow this pricing structure.

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Usage-Based Pricing

The price of software can depend on the number of users. A few vendors' price is based on the number of concurrent users, while others may follow peak usage based pricing, e.g., the price can be applicable to usage not exceeding 50 users.

Variant-Based Pricing

Not all buyers require all features. Hence, pricing the product is based on the variant — more the features (and perceived benefits), higher the price. Microsoft follows this pricing structure for its Windows and Office product variants.

Purpose-Based Pricing

The pricing structure depends on the type of usage of the software product — the evaluation version is priced low or often is free (with short license period), the development version can have a low price (with limited features), while the deployment version can be the highest. Vendors who sell both development tools and deployment platforms follow this pricing structure. Typically, software service vendors may require only the evaluation and development license, while the end buyer may require the deployment license.

Geo-specific Pricing

Pricing of IT products and services will also depend on the geography of delivery of the service, or of the creation of the product. This is because of the costs associated with specific countries and regions owing to their varying fixed and variable costs. The phenomenon of geo-specific pricing is the true basis for offshoring of IT.

Leasing

In this category, the buyer is saved from investing for the software upfront. This helps the vendor capture a large market share. The pricing can be primarily based on the number of licenses, limited in time. Vendor support includes maintenance and upgrades for the lease period, somewhat similar to a wet lease. If the buyer does not renew the contract after the lease period, the vendor discontinues the support, and the buyer retains the right to continue the usage, but without upgrade. Such a scheme is popular with anti-virus software vendors.

Hardware Pricing

The hardware market, especially the desktop and server market, has very few differentiators. However, there are quite a few pricing structures prevalent in the market.

Size/performance-Based Pricing

The pricing is based on performance related parameters like storage capacity, data transfer speed, processor clock speed, type of processor, number of processors, redundancy features like Redundant Array of Disks (RAID), memory, compatibility with peripherals, Reliability-Availability-Serviceability features (RAS) and other technical parameters.

Platform-Based Pricing

The system may be built using CISC processors, RISC processors or software upgradeable processors (like Transmeta), and this factor can determine the price of the hardware. Some other computers may use Application Specific Integrated Circuits (ASICs), and this can substantially increase the hardware price.

Bundled Pricing

A few IT vendors offer both products and services. Bundling is popular with hardware vendors, especially to make a difference in the proposal to the buyer. Typically, bundling may include software, hardware, peripherals, additional warranty and training. Typically, if the organization sells both hardware and software, the latter can be the differentiator; if, in such an organization the sales policies are not well-defined, the hardware sales persons can try to bundle software at large discounts. Empirically, software product sale is more profitable than hardware product sale. Reducing software profit margin to make hardware attractive (cross subsidization) not only brings down the overall profitability, but also discourages software sales persons. Such a situation is common with resellers who sell both hardware and software. They may also distribute products of other vendors. Such vendors position themselves as “one stop shop” for their buyers. Such vendors may not like to disclose the prices of individual items, and hence may offer a bundled price to the buyers. Bundling creates dissatisfaction in the sales force.

Leasing

Leasing is an attractive proposition for both vendors and buyers. Most hardware lease deals are structured as hire-purchase where the buyer is obliged to buy the hardware at the end of the lease period. However, if the deal is not structured as a hire-purchase, and the buyer does not opt for purchasing the hardware, then the vendor sells the hardware, often after refurbishing.

Shared Services Pricing

In hosting services, the pricing may be based on sharing of buyer's savings, owing to the shared service provided by the vendor. However, such a scheme can work only for a short period to demonstrate the benefits. Then the pricing

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has to change to either T&M or FP. Vendors of content hosting may charge a base price for a period (say one year), and then additional price for the modifications/enhancements made on the content during the hosting period. Vendors of infrastructure (like network link) may base the pricing on the usage within the contract period.

Many software vendors offer their products in the Indian market at prices substantially lower than in the western markets. Hence, many buyers from abroad may source the software products through Indian distributors, along with the software services. In such deals, the software service vendor in India procures the software from the Indian distributor at Indian price, with the buyer located abroad as the licensee. The buyer then issues a letter to the Indian software service vendor stating that the development license has been transferred to the latter for a specific period for the purpose of development, and the license may be revoked once the development is complete. The vendor un-installs the software from the systems used in development after the work is completed. This method is similar to the trans-shipment method adopted in international trade.

Peculiarities of IT Pricing

The IT industry, as noted earlier, is profuse with peculiarities. There is a large variety of pricing structures — from simple to obscure, and bundling is popular. Co-bundling, where two or more vendors offer a package containing their products at a discount, is popular too. Resellers have conflict of interests with competing vendors when they approach the buyer. Vendors opt for multiple distributors in the same market (multi-distributor model) to hedge their risks of market coverage. The sales process in the IT industry is highly dependent on pre-sales where the buyer needs to be educated about the product and its benefits. The cost of frequent training of sales and pre-sales persons is quite high. All these add to the pricing woes of vendors and resellers.

Issues with IT Pricing

Along with the peculiarity inherent to the IT industry come the pricing issues in it. The first issue may be: how to sell a priced software product when there is a compatible freeware that is actually better? This can be called “Microsoft’s headache”. Replication costs of software are very low and piracy is rampant, eroding revenues of legitimate product vendors. Gone are those days when buyers expected all the relevant software to be bundled free with the hardware. Yet, there are many buyers in the market that do not wish to spend more money on software than the underlying hardware. The creators have a problem with the resellers as the message of the real worth and benefits of the product or

service gets diluted along the channel. There is also the corruption of this message that many product details get misquoted, and the occurrence of erroneous product quotations is very high. The cost of post-sales service is often underestimated.

Impact of Piracy

Software piracy makes severe impact on the revenues of legitimate product vendors and discourages the spirit of innovation. Piracy occurs because of various reasons: the original product may be very expensive (sometimes costlier than the underlying hardware), or the licensing schemes may be overly restrictive or, simply, the cost of replication is very low.

In some cases piracy is vendor driven. It happens as follows: some vendors provide their software drivers for devices like CDROM, DVD etc., only for popular operating systems (OS) like Windows. Actually, the device per se may be OS-independent (i.e., it can work with other OS); however, lack of availability of the software driver on the OS of choice denies the user the right to use it with any other OS. The user has purchased the device, but is denied the ability to use it, and this is unfair. This forces the user to use only that particular operating system, putting a financial burden of purchasing the operating system. Traders in many countries install pirated software on the desktop computers they sell, for sweetening their deals. Hackers too enable piracy by ripping many entertainment software and distributing them.

Generally, desktop software like those from Microsoft and Adobe are pirated. Server software like those for web servers, application servers and mainframe simulators too are no exception. Creative tools like graphics tools, web content creation tools and multimedia software are pirated too. Probably the latest victims of piracy are the gaming software vendors.

Piracy is rampant in countries where enforcement of IPR laws is not strict. Often piracy is committed by individual users, Small & Medium Businesses (SMBs), and training institutes. Large corporations too end up with pirated software for various reasons such as not tracking the software assets for number of licenses, and use of pirated software by employees without the knowledge of the corporation. SMBs, training institutes and large corporations can be classified as incremental pirates since their software usage may exceed the limit set by the vendor.

What are the different approaches a vendor can take to fight piracy? Well, there are a few:

Legalization

The vendor, upon identification of the pirate, offers to legitimize the usage for a price, by coercion or force. This price can typically be a fraction of the marked

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price of the product; it brings in some revenues to the vendor and helps avoid long drawn legal battles. Generally, legalization deals are done discreetly, guaranteeing the pirate no loss of reputation for the illegal actions. The downside of legalization deals is that pirates may get encouraged since they expect the vendor to legalize at a discounted price.

Differential Pricing

Piracy of books by photocopying has been very common in many countries, resulting in huge loss of revenue. Publishers have found a remedy which may not be the most desired one. They publish books specifically for those countries where piracy is rampant and sell them at a lower price (that is lower than in other countries). When the original book itself is affordable, piracy by photocopying becomes a less attractive route to take. This presents an interesting parable: consumers in countries where law enforcement is strong pay more than consumers in piracy-prevalent countries! In a sense, honest customers cross-subsidize the pirates that legalize. The price to pay for rectitude is high.

Software vendors too can adopt a similar differential pricing approach where buyers in piracy infested countries pay a lower price than their ethical counterparts elsewhere. This definitely reduces profitability, but lower profitability is definitely preferred to the loss of market. However, book publishers make up for some of the lower profitability in such markets by sourcing lower quality paper and reducing the quality of print. Software vendors too can adopt similar approach by providing lower variant in such low priced markets. Another disadvantage of differential pricing is that the goods may be purchased in places of low price, and be used at places of high price which is a gray market practice.

Legal Enforcement

Taking government support against piracy is definitely a desired route for many vendors. Many vendors approach the legal system of the host country to eradicate illegal usage by raids on pirate establishments, threat of legal action by direct mailers, and incentives to legalize. Generally, legal enforcement is an expensive proposition; it will be financially uneconomical and, is not viable business-wise to make pirates fall in line through enforcement.

Anti-piracy Technology

Many vendors build in anti-piracy technologies in their products. In some cases, software product vendors make their products proprietary hardware dependent, and provide hardware locks to buyers. Generally, the cost of reverse engineering such locks does not justify piracy; also, such locks cannot easily propagate, unlike software that can be downloaded from the network. The

demerit of the hardware locks approach is that such hard goods become purchase barriers (involve shipping), and can hinder sales. With the pervasiveness of computer networks, anti-piracy technology has become a viable proposition to track pirated copies. Products are built to contact the vendor (callback) via the Internet. Vendors can then track the keys of the software and distinguish pirates from legitimate users. Support can be disallowed to pirates preventing them from downloading updates and patches. The demerit of anti-piracy callbacks is that such callbacks may be disabled by hacks.

Awareness

Vendors often launch media campaigns and propaganda to discourage piracy. They take the assistance of software bodies that represent the software industry in the host countries and try to educate the pirates on the legal implications. This is a long-drawn process that may call for a change in the social mindset of pirates. It is expensive to create awareness of piracy, and yet make it matter of self-discipline. Many users may still pirate.

Pricing Postulates of Markets

Having studied various pricing structures in IT markets, let us know some market postulates on pricing. These postulates may apply not only to IT markets, but also to any other.

- There is no correct price of a product; there is only an optimal price range. Hence, correct price is a myth; only cost is truth.
- Most sales persons have a tendency to under-price goods, with the premise that goods sell if they are priced low.
- Buyers respect those sales persons who know their goods well and in this way, sales persons can justify the price.
- It is always possible to sell with good profit margin.
- In recession times, the purchase process becomes convolute, the purchase period painfully elongated, and decision-making postponed for no reason. Significance of differentiation, as a factor in influencing price, reduces.

Questions

1. What are the effects of hacking of software and hardware on pricing?
2. What are the disadvantages of per-seat pricing in support services?
3. In what ways does third party participation in enhancing product/service help in determining pricing?
4. What are the advantages and disadvantages of pricing software based on the underlying hardware?
5. Does the availability of an evaluation version of IT products and services delay the sale?

FREE SOFTWARE — WHAT IS THIS FREEDOM?

It all started with a court verdict in the USA in the early eighties that recognized software, which was till then given away by the hardware vendor with the hardware, as an independent product, thereby opening up the market for other vendors to create software for this (and other) hardware. This ruling heralded the creation of the software product industry and, subsequently, a new market by un-bundling hardware and software. Further, the development of the Operating System (OS) for IBM¹ PCs by Microsoft² and IBM-compatibles. However, like in any market, some vendors began dominating the market with large market-share and began establishing conditions favourable to them. This monopoly in the OS as well as office applications markets did not seem to go well with independent thinkers like Prof. Richard Stallman. True, any monopoly, however good, is not good for any society at any time, for at best, it is like being ruled by a benevolent despot.

Meanwhile, marketing too had evolved from hard selling to experience-oriented selling. Information technology vendors had come to accept the fact that buyers need to experience their software before buying them. Hence, they too were willing to let buyers try their software free, within certain boundaries.

Prof. Stallman pioneered the “Free and Liberal Open Source Software” or FLOSS which more recently came to be known as the FOSS³. Today, the market has a plethora of free software offered by different product innovators, such as vendors and communities. “Free” has different connotations, and “freedom” is also context-sensitive, as defined by the innovator. This presents an interesting situation that calls for a deeper understanding of free software.

In the following sections we present a classification of free software. There may be other ways of classifying the same, but for simplicity, we consider time as the basic guiding parameter for this classification.

Subsequently, we examine each class of free software, its necessity, support issues associated, and implications that free software poses to vendors and users, followed by the larger implications for society.

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In this chapter, we use the terms innovator and vendor interchangeably as the channels (vendors, but not innovators) usually do not have any say in deciding the freedom of use.

Table 6.1 Types of Free Software

<i>Time dependent</i>	<i>Time independent</i>
Unfinished products Time-bound	Component based Variant based Architecture based Usage based User type based Intellectual property based Total freeware

Though the table above uses time as the criterion, there may be other criteria of classification. From another perspective, there are two types of freedoms — financial and intellectual. For example, financial freedom may not restrict users from installing software on many computers, and let many users work use the same. Intellectual freedom may allow users to look up the source code, or even make enhancements and provide those enhancements to others.

Unfinished Software Products

These products are typically called “Beta” in the software jargon. The product may not have full functionality in many cases. The product is usually not free from defects (buggy). Does this mean that the finished product may be bug-free? Not necessarily. To quote some genius, “If civil engineers were to build buildings the way software engineers create programs, then the first woodpecker can destroy the entire civilization”. A Beta product is usually time-restricted, though not necessarily always. The vendor may give a key that activates the software on the computer, and this key keeps the software active for a pre-determined period. The vendor mostly offers no support during Beta except basic installation and user instructions, but this trend is changing with many vendors actively supporting Beta users to improve the quality of the product. The vendor need not worry about the continued usage of the product by the user as the product may not be complete, and the user too may not be too enthusiastic to use an untested, unfinished product. Yet, it is in commercial interest that such a product should expire after a specific usage period or after a specific date.

The vendor’s business goal is two fold: to reduce bugs before the product is released, and to assess the acceptance of the target users. There may be other goals such as to keep the users in “occupied wait” state, while giving the market a message of commitment to the product roadmap.

Time-bound Software Products

This class of software products has two sub-classes. Let us consider them one by one.

First is that of products that expire after a limited period of usage (for example, 30 days from the date of installation). Expiry period may mean that the license alone expires. The vendor may choose to build a feature that automatically disables the product after the license period. For such products, in some OS, it is possible to remove the registry entries of the software and reinstall it for use again. The vendor can rest assured that the user cannot use the software easily forever, as every re-installation brings about a window of unavailability of the software, and also makes any other application dependent on this software product unavailable during the reinstallation period. For example, if a user installs the trial version of the OS, then during the trial period, the user may install other software such as browsers or office-suites as well. When the OS trial period expires and the user has to reinstall, during the reinstallation period, not only the OS but also these other software will not be available for use. If, however, the vendor does not incorporate the auto-disable feature, the product continues to work even after the specified license period is over (for example, some versions of Winzip⁴), and users continue to use (perpetual evaluation). Not incorporating auto-disable feature in the product costs the vendor dearly, as users may not take the license terms seriously.

In the second sub-class, the product expires on a particular date and stops working. It may be possible for the user to reset the system date to the valid usage period and continue to use. Yet, the vendor may rest assured that the product will not be used by the user perpetually in the production environment (intended long-term regular usage). This is because resetting the system makes the user lose the correct usage logs (same dates keep repeating in the continuous usage logs), rendering such logs unfit for audit and transactions conducted on such a system may be open to repudiation.

In this class, the vendor's goal is to get the user hooked to using the product vis-à-vis competing products, and hope that the accustomed user will opt for purchasing it in the market.

Component-Based Free Software

This class is prevalent in the mass market software, like office applications and desktop publishing applications. The vendor usually gives away a component (a part) of the software for perpetual use, without any obligation to purchase the other components of the product. The free component supports limited functionality. Other part(s) of the software can be purchased by the user, if required.

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The vendor's business goal is to establish a standard or set a benchmark/make the product more widespread (applicable in various functions), thereby increasing the market share. There are many examples. Adobe⁵ gives its Acrobat Reader (that reads its portable document format — pdf documents) free, to establish the pdf as standard, while the Acrobat Professional which is used to create the pdf documents is a priced product. Microsoft gave away Power Point Viewer free (to view presentation slides), while the Power Point software used to create presentation slides is a priced product.

Variant-Based Free Software

This class includes products that have multiple variants/editions. The vendor gives away the basic product variant free. The basic product supports a limited set of features and functionality. More important functionality/critical features are available in the advanced variants. Like the component based free software, the user has no obligation to buy the variant that is richer in features (a process called product Upgrade). This class is prevalent in mass market products as well as in software development tools.

In another sub-class, a product that runs on a particular OS may be free, while the same product may be priced on other OS. This serves many purposes for the vendor. The vendor can limit the usage to one's own or preferred platform, undermine other platforms, and yet reach the product to the users. The risk that the vendor organization faces is that of acceptability of its own or preferred platform. If the platform that the vendor chooses is not well accepted in the market, it stands to lose. This is usually practiced by vendors who have their own OS.

The vendor's business goal is to promote the product through first-hand experience, and tilt the usage learning curve towards the promoted product (hook on), in anticipation that the user will eventually purchase a priced upgrade. This class is also targeted at advanced users who need to use better designs (as in software development), or enjoy better experience (as in mass market products). There are many examples. Sun Microsystems⁶ was giving away the basic Forte for Java Community Edition free, while the advanced Enterprise Edition was a priced product. Real Media⁷ Player's basic product is free, while its advanced variant is priced. Vendors also build in-product advertisements (splash screens) in the basic variant to constantly remind users to upgrade to the advanced variant. These screens may splash up every time the user uses the basic variant. There are variations to this as well. Some free variants have embedded third-party online advertisement feature while the priced variant will be free of advertisements. In this manner, the vendor monetizes both variants — the free variant being paid for by third-party advertisers and the priced variant being paid for by the users.

Architecture-Based Free Software

Freedom of usage can be restricted by technology in products that are “multi-tier” (i.e., the software requires two or more computers connected in a network). This means the vendor gives away the product corresponding to one tier (usually the client tier) free, while the other tiers (middle, server tiers) may be priced. This is well in vogue for products that are used by organizations (known as the Enterprise Software class of products). Usually, in enterprise software like Enterprise Resource Planning packages (ERPs), a dedicated client of the software is a priced product, while the generic client is free. As expected, the generic client provides limited functionality, while the dedicated client provides greater functionality.

The vendor’s business goal is to prompt organizations to purchase feature-rich client software for all their users. Until recently, mail clients with POP feature were priced products. Users can use e-mail servers using browsers, by the way of HTTP IMAP access, without having to buy dedicated POP clients.

Usage-Based Free Software

The vendor’s licensing terms in this class depend on the type of usage.

In the first sub-class, the licensing depends on the purpose of software usage. Typically, this purpose may either be application development or application deployment. Most software vendors make deployment products/licenses priced, but offer development tool or license free. There are instances of a few vendors offering deployment licenses free, and pricing the development products.

In the second sub-class, usage can also have numerical restrictions based on one or more of the following parameters of usage viz., a certain number of installations, underlying hardware (RISC, CISC), number of processors, number of concurrent users, and many others. If these licensing terms are not enforced technologically, the innovator may lose the due revenues of usage beyond the free license terms.

The business goal of the vendor is usually to get the users accustomed to the product and acquire the market once the users’ product usage increases.

User Type-Based Free Software

In this class, there are usually few or no product variants. The restriction is based on the type of user — commercial and non-commercial. Home users can usually get to use the software free, while businesses need to purchase. Pricing for business users is usually based on the number of users.

The vendor’s business goal is to address the high revenue segment of the market effectively, simultaneously building mind share among all types of

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users. The premise is that a user is likely to prefer and recommend usage of a software to the employer, if the user is happy with using the free variant on home computer. Since individual buyers may cost the vendor more than commercial users to support, the vendor can earn more profits by concentrating on commercial users who not only buy the product, but also pay the vendor for supporting the product. Individual non-commercial buyers who get the product free cannot bother the vendor for support. A typical example is PowerZip⁸ file compression software which is free for non-commercial use, but priced for commercial use.

Intellectual Property Rights (IPR)-Based Free Software

In this class, the entire software is given free, sometimes including the source code. The freedom of usage is restricted by way of complex legal contracts. The users are often not allowed to modify the original product, or may do so by obtaining prior consent from the vendor. In such cases, all the derivative IPRs (like a new feature) rest with the vendor. Violation of the IPRs can attract litigation. This form of licensing is well adopted and propagated by Sun Microsystems, and implemented by many other companies.

The vendor's business goal is to attract users to the latest version of the software, while giving away the older version and its source code free for enhancements (under the condition that the source code of the improvements may also be open). This can also be a move to scuttle competition while simultaneously incorporating the advantages of the product enhancements that the open source community brings about (if the older version is opened up for the free developer community).

Open and Free Software

Under this class, the software is developed ground up either by software enthusiasts, or companies which may contribute their products to the open source community. Everything, including the source code is open. Software is distributed under GNU⁹ General Public License (GPL) or its variants. Under GPL, anyone is free to develop enhancements to the original product, but the enhancements have to be under GPL too. Under others, the enhancements need not be compulsorily disclosed. Usually the creator is acknowledged (a process known as "copy-lefting", an anti-thesis to the perceived restrictive effect of "copy-rights"). Anyone is free to redistribute the product for free (but may charge a nominal amount for the recording media such as a Compact Disc or a Digital Versatile Disc and printed product documentation).

Software for Societal Good

The classic examples are Linux¹⁰ and Apache¹¹. These inculcate the true spirit of FOSS. FOSS is easily among the greatest and most involving movements of the twentieth century.

Support Issues with Free Software

Free software is good — for vendors, communities, and last but not the least, the users. Unlike most hardware or white goods, software is generally not “plug and play”. Software is an experiential product. Users too may be at different points along the learning curve. Hence, supporting the user after sale of the software becomes a necessity. So, how is the support provided?

In the world, most of the products across industries, without the exception of the priced products, lack the support that buyers rightfully deserve, even after the buyers enter into a support contract with the vendor by paying exclusively for the period of support. This is probably because, worldwide, it appears that buyers are far less organized than sellers. Software buyers have to accept the vendors’ terms of license before the usage if they have to use the software, without any room for negotiation. Under the carefully worded license terms, software vendors limit their liability to zilch. This problem is compounded by another market phenomenon: the software industry undergoes consolidation very frequently, with routine mergers. Since most of the license terms may not have a successor clause to protect the software buyers with continued support in case of acquisition, the support can stop anywhere, anytime. This means the new owner of the software product/company may not have the obligation to continue support. To aggravate the problems, buyers rarely find software that is bug-free.

Problems are not limited to users alone. Vendors sometimes distribute free software through their distributors, informing the user clearly that no support may be provided, and the purpose of distribution is limited to preview and evaluation. However, users expect free support for the free evaluation software and trouble the distributors and channel partners. Some users even go to the extent of presuming that support is their birth right.

For total freeware (open source), support is surprisingly a real delight, many a times contrary to that of the priced products. Users post their queries to user groups and get them clarified in global time — geeks are awake around the globe, and are genuinely interested in providing help and fixing the bugs. New features also get incorporated into the open source products faster than to priced products. It is said that a big feature may take about three years to get incorporated into a commercial product, while a similar feature takes just about a week in the open source world.

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It is common knowledge that vendors solicit user feedback for the evaluation software to incorporate the suggestions or improvements in the full product. Feedback for Beta products may not get incorporated due to product release expediency. Bugs get carried into products even across their generations (commonly referred to as versions).

Effects of Free Software on Vendors

Free software has a multitude of implications for the vendors. First, let us look at the positive ones.

Giving away a product free can increase the usage base. With usage, the product can become a standard per se. The vendor may have no obligation to support, and carries no liability. Feedback can improve product quality to make it more robust. This is like outsourcing testing to enthusiasts and early adopters, thereby reducing the cost of product engineering, if the vendor is prepared to accept unstructured feedback from users. In the recent past, the feedback channels have also evolved to get feedback data in a structured way to the vendor. The end-user evaluation can reduce the product development cycle, especially as the vendor gets to know what features are important to the users, and users may participate in developing these features. Products co-developed with users make users favourably biased towards them. Any product can get free publicity, when it is given away free.

The FOSS movement has far-reaching implications on the hardware vendors and independent System Integrators (SI) as well. Bundling FOSS and services presents a great value proposition to the buyers by reducing their software license procurement costs to zero. Building expertise in FOSS can take hardware vendors and SIs a long way in beating competitors who offer expensive commercial software to buyers.

There are negative implications as well. By giving away the core product free, vendors have to look for alternate sources of income. Beta evaluation can fetch bad publicity if the product is bad, and may result in sales lower than the vendor's estimate. Unfixed bugs (of Beta) in the product may evoke bad publicity and signal the users that the vendor is not interested in them. Absence of free support during evaluation/usage may discourage users and affect the product adversely.

Effects of Free Software on Users

The biggest positive effect on users is that they need not pay for the software, at least for a while. If the basic product or the free usage period suffices the purpose, then the user need not pay at all. Users can get better software products by participating in the engineering process. Sometimes the IPRs may be free, and this gives users freedom to improve the software. Users need not pay for

proprietary or monopolistic software. Freedom becomes the mother of innovation. Support can be faster and satisfactory if the product is a total freeware.

So, why is every user not moving to free software? The reasons are many:

1. More efforts may be required from the user's side to learn and use the free software. However, this is becoming less of an issue as software training institutes are offering courses on free software.
2. The product/technology road map may not be clear/predictable, as it may be developed by a community, or the vendor may not be able to give the software free any longer. Take the case of Sun Microsystems. StarOffice 5.x was offered free, while StarOffice 6.x is priced. Sun opened up StarOffice 5.x eventually to spin off OpenOffice.org.¹² Sun Microsystems can benefit from the contributions of the OpenOffice.org community while simultaneously competing against Microsoft with better product as well as support revenue accruing from the sale of StarOffice.
3. Another hazard for the user is that the "free" spirit may lose momentum. A similar risk is posed even by commercial software, as the vendor can close operations or get bought over.
4. Free software gets longer to become a mainstream product. Paid support too may not be available, if the product has not entered mainstream.
5. Users may get unwanted features (for example, unsolicited advertisement banners, tickers) in lower variants of free software, and this can be irksome.

A few developments in the software product market have increased the adoption of freeware. Many vendors of Linux distributions have taken a wonderful approach of letting users try their products risk-free, that too without even having to install them. A technology called "live CD" allows the users to experience Linux without having to install, but just inserting the CD in the computer and rebooting. Some distributions like Kubuntu¹³ do not need a reboot. This is a great way to attract users. Some distributions of Linux such as "dyne:bolic" have a better technology that nearly eliminates the need to install Linux and yet run it satisfactorily. Many Linux vendors also bundle free-to-use product such as Flash (from Adobe) and RealPlayer, enabling the users to use commercially popular file formats. Most Linux distributions now have OpenOffice.org as the default office application. All the bundling, such as those described here, may reduce the users' cost of learning and installation. For those users who are very particular about using only GPL open source products, some Linux vendors provide only GPL applications and do not bundle commercial freeware.

And Finally...

Can hardware be free? Sun Microsystems has made the design of its processor open. This means hardware engineers can contribute to the improvement of the

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processors by participating in the OpenSPARC¹⁴ community. While the design is open, it still means that the users have to pay for the processor that may use OpenSPARC IP, because of the fixed cost of fabrication.

Free IT Services

Are freeware services available? There are many indeed. As observed with software products, these services too have specific licensing terms and may not allow customization. A few variants of services may be free while others may be priced. For example, using Skype¹⁵, calls across computers are free (for Skype-Skype clients only), but calls from IP networks to PSTN networks (and vice-versa) are priced. There are other software that bridge users across service providers e.g., now Yahoo¹⁶ and MSN instant messaging users can communicate with one-another and likewise with GoogleTalk and AOL Instant Messenger. Google offers services of translation across human written languages and office software.

Vendors may use different combinations of restrictions for limiting the usage, e.g., for limited software with limited freedom. This practice will continue, as companies see benefits of this as a less expensive form of market research.

All free software are some form of promotions — some leading to monetary gains, and some for a mission (which may well be that of breaking a commercial monopoly). Usually infrastructure software becomes free first, then the applications on them. For example, Linux and then StarOffice. Hardware vendors may offer infrastructure software free to popularize their hardware, while more and more software becomes infrastructure over time. Now, the open source momentum has grown from scientific packages to even business software such as ERPs.

As a rule of thumb, total freeware takes some time to go mainstream (limitation of learning curve or product development), but if the open source product gains momentum, corporate vendors jump into the fray (for example, IBM support for Linux at the cost of its own OS AIX, and Sun support for Apache). Rising alongside is a new breed of service vendors that offers support on popular open source software. Big vendors may try to hijack the FOSS momentum by funding them and making them more proprietary. Such an attempt can be perceived as anti-social, and anti-human by open source activists while such vendors may consider it as a strategy for survival.

With the rise of free software, one can hope that the product development time will definitely shorten, and the quality of software products will improve. Finally, monopolistic vendors and bad products may be weeded out, if they ignore the competition posed by freeware.

Going beyond IT, can open-sourcing help societies in any other ways? The Economist published two articles mentioning that such a phenomenon can have larger social effects. These two articles are “Open Source’s Local Heroes” and “An Open Source Shot in the Arm”¹⁷.

Notes

1. <http://www.ibm.com>
2. <http://www.microsoft.com>
3. <http://www.fsf.org>
4. <http://www.winzip.com>
5. <http://www.adobe.com>
6. <http://www.sun.com>
7. <http://www.realnetworks.com>
8. <http://www.powerzip.com>
9. <http://www.gnu.org>
10. <http://www.linux.org>
11. <http://www.apache.org>
12. <http://www.openoffice.org>
13. <http://www.kubuntu.org>
14. <http://www.opensparc.net>
15. <http://www.skype.com>
16. <http://www.yahoo.com>
17. <http://www.economist.com>

Questions

1. What are the key factors for the survival of open source movement? What factors may aid this movement to prosper?
2. Does it make good business sense to give away low-end variants of products free for use?
3. What factors may entice users to upgrade from basic free products to high-end variants?
4. How can commercial software product vendors compete with FOSS? What challenges do these vendors face while competing against FOSS?
5. Can the open source model be adopted in the hardware space?
6. Do FOSS provide any benefits to software services vendors?

PART III

REQUIREMENTS FOR MARKETING OF INFORMATION TECHNOLOGY

- 8 Globalization of Information Technology**
- 9 Branding of Information Technology Products and Services**
- 10 Role of Technical Marketing in Information Technology**
- 11 Launching of Information Technology Products and Services**
- 12 Role of Technical Support in Marketing of Information Technology**

GLOBALIZATION OF INFORMATION TECHNOLOGY

In this chapter, we will discuss Globalization in the Information Technology context (also abbreviated G11n¹), and also its importance in marketing of IT. We will also study components of IT G11n, the processes IT vendors are required to globalize, and how G11n can help in marketing of IT. Finally, we will understand the issues that face when globalizing their IT products and services.

Globalization

In a macro sense, IT G11n is enabling IT products and services to work globally, in various IT environments that exist in different countries. It involves two components viz., Internationalization (I18n²) and Localization (L10n³).

Why Globalize IT Products and Services?

IT owes much of its origin and growth to the US and Europe. IT was “spoken” in English, meaning the user interfaces were in English, as was the documentation. Technology-wise, it also did not deal with currencies other than US dollars, and a few European ones. So much so that many products and services produced in non-English speaking countries also “spoke” in English. However, with the economic globalization wave, producers of various goods and services realized that the wares they export need to speak more languages, and inculcate many local cultures to sell in the international markets. IT and telecommunications have been the main catalysts of globalization, and they too have had to meet local requirements. This meant that IT wares could no longer be produced or sold in English markets alone as the non-English markets that were growing in size. G11n of IT products and services to meet the buyers’ local needs may be a regulatory requirement, or a country-entry criterion for the IT vendor. The opportunity lost to local vendors or competition, if the product or service does not speak any language other than English, has always been

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high (and will continue to be high). Many vendors have realized this and engineered their products and services for the local markets from the very beginning. It is of financial interest to know that the need for G11n may not necessarily arise from the local markets, but can be necessitated from the home country itself. A simplistic example of this home-necessitated localization is how the linguistic diversity in the US has required telecommunications service providers to offer their services in Spanish (to cater to the Hispanic community of significant size), as well as in English. It is common to hear messages in multiple languages in India while using various telephone services or while waiting at railway stations, because being polyglot is all too common in India.

Components of Globalization

G11n is not just about language or interfaces in local languages. The following are the components of G11n:

1. Engineering I18n
2. Localization (L10n)
3. Globalized technical support

Engineering I18n

The simplest example of Engineering I18n is providing electricity plugs of electronic goods that match the socket specifications of various countries, and power adapters that meet various electricity supply standards like 50~60 Hertz and 100-230 Volts⁴. I18n involves engineering the product or service to suit local engineering requirements, such as applicable electricity interfaces (plugs, sockets), local encryption standards, telecommunication network requirements, regulatory requirements, and logs and reports in local languages. The technology export control regime of USA restricts the export of technologies of certain specifications to many countries. However, not servicing IT demand from such countries can cost the US IT vendors a lot in terms of lost opportunities. Hence, many US IT vendors release localized (read “scaled down”) versions of products/services to such countries to comply with the US Department of Defense specifications.

There are many approaches that IT vendors take towards Engineering I18n. These are discussed in detail below.

Universal Usability Engineering

Vendors engineer their product or service to make it workable in any country, as well as meet the local specifications — just like plug-and-play-anywhere. This means providing features in products that are engineered to work in many countries. For example, a TV can be engineered to work in US, France and India. These three countries follow different broadcast standards NTSC, SECAM and PAL respectively. Making the same TV to work without any external accessory means the electronics engineered nearly thrice as much. This

increases the cost of production. Other examples of this approach include GSM telephone companies that produce quad-band handsets that work in Asia, Europe, Australia and USA. The advantage of this approach is that the product can be made (engineered and manufactured) in any country, and be exported to any other country but it is sure to work fine, thereby freeing the vendor from location-dependence. Hence IT vendors that have globally distributed production facilities commonly adopt this approach, if the cost increase for multi-standard products is not very high.

Country-specific Engineering

This is the polycentric approach of international marketing. Here, the vendors may release products/offer services by engineering them specifically for destination-countries. This too is an expensive approach whereby the product or service is made to assume a completely local identity. Small IT vendors operating locally take this approach, as production for only one country will not cost much.

Customization Engineering

This is a mass customization approach. Some vendors offer a basic product/service compatible with multiple languages, engineering specifications and formats, but leave the customization to the buyer or reseller. APIs (Application Programmer Interfaces), hardware or software adapters, programmable hooks, converters and configurable user interfaces are provided. This approach minimizes the product or service engineering cost significantly, but the vendor faces the risk of revealing the IT product/service details (intellectual property), at least a little, to outsiders. Examples of this approach include code-free DVD manufacturers that allow the user to select the region's DVD code. Many camcorder manufacturers allow creation of VCDs and DVDs in multiple local formats such as PAL, NTSC and SECAM through the editing software they distribute. For commercial IT vendors, this approach works in countries that have strong enforcement of intellectual property laws that prevent smuggling/trans-shipment or gray market enabled by hacking. Open source communities allow customization in this way for creating I18n versions. The base code is approved by the community's governing body, and programmers around the world take the source code and customize it to the needs of their countries⁵.

Business Logic I18n

Business Logic Internationalization is a subset of Engineering I18n. Business practices and rules vary with countries, and so do currencies. Common examples of such I18n-drivers are currencies, taxation rates, tiers of taxation (central/federal tax, state tax, city tax and surcharge), currency denominations, units of measurement, text display and insertion in different directions (right to left, left to right), and non-Gregorian calendars. There are more specific examples of Business Logic I18n such as Islamic banking laws and *sharia*-compliant insurance software. IT vendors can again choose to implement the

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local business logic in their product/service or outsource the implementation to third party System Integrators (SIs). An example of products customized for Islamic banking is Flexcube of i-Flex Solutions. Business Logic I18n may also be necessitated for regulatory compliance such as Sarbanes-Oxley Act (SOX, USA) and BASEL II (Europe).

Localization

Localization involves development of all user-facing components such as product interface and documentation in local languages, including text, audio and video. To implement L10n, the underlying IT product must be internationalized to support local languages of the destination markets. This can mean, for example, that for showing Chinese characters, the product may have to be engineered to support Unicode or double byte⁶ support, in contrast to single byte support that is sufficient for English⁷. The documentation, including illustrations, needs to be translated into local language. Generally, companies outsource this task of translation to L10n vendors. UI language strings developed mostly in English, are generally stored in “resource files”. These resource files are handed over by the IT vendor to the L10n vendor. The L10n vendor uses various automated tools to translate only the user visible strings (but not log messages) while ignoring the system program text. Documentation L10n too is handled in a similar way, but the L10n of illustrations is done manually by bi-linguists. For most of the audio or video (provided to end users) L10n has to be done manually, though some specific tools may help automate L10n.

For L10n to be successful, the product has to be engineered to:

1. handle user inputs of various languages; if the user input is in audio, the IT system has to be trained to understand the local language and interpret it correctly.
2. do mathematical and logical operations for business, as required by regulation.
3. provide output in various languages, either in text, audio or video.
4. display the text output of the operations correctly to the user with the correct formatting on various devices, or provide audio output/video output in correct language and correct cultural context.
5. process country-specific data and file formats.
6. packaging the product in the locally acceptable way.

Engineering I18n has to be implemented before any L10n can be implemented, because the product or the IT system (that enables the service) needs the technical capability to handle local business logic and content.

Globalized Technical Support

Globalization of an IT product is incomplete if the support is not provided in the local context. Support can be provided to buyers in their local context if the

support personnel speak in the local languages. However, for support to be completely globalized, there are many other requirements, such as the product itself being globalized, and globalized Buyer Relationship Management (BRM) packages and service in local time zones.

Open Source and L10n

In the open source world, the base product is internationalized (usually). Since the product interface engineering source code is available free to modify, engineers around the world localize the product (as in customization engineering discussed earlier in this chapter). In fact, open source L10n is far easily done than by commercial companies, simply because the source code is accessible to every enthusiast, and is also free to modify, without intellectual property rights barriers. Open source L10n also helps the social cause of spreading computer literacy to the masses (computer literacy cannot be dependent on English literacy, as we know by now), especially in the developing world.

The G11n players, and the Process in the Commercial Market

There are various players that operate in various stages of G11n of IT. Their roles are critical, as described here.

The Trainer

This is usually an entity that is different from the product/service vendor. The trainer trains the vendor engineers on

- internationalized software/hardware design and development.
- language usage.
- use of G11n verification tools (such as Globalizer).
- etiquettes of communication in local language (for support and other services).

The L10n Contractor

The L10n contractor translates the resources (items that need L10n) from the source language to the destination- language. Such resources may include all the components listed under section Localization earlier in the chapter.

The product/service Creator (vendor)

The vendor accomplishes the globalized engineering of the product/service, and verifies the same from the engineering perspective. He/She gets the L10n deliverables from the L10n contractor and integrates them into the product/service, appropriately.

The Reviewer

The reviewer verifies the product/service before it is released into the market by the vendor. It is a good practice to engage local resellers in the review of products/services, for the following reasons:

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- They have the specific product/service knowledge which can make their reviews effective.
- They are interested parties since they benefit from the vendor's G11n.
- They may offer review services free of cost.

If the vendor has local offices and employees, such employees can be reviewers too, for the reasons listed above.

Impact of L10n on Marketing and Sales

Localizing the product/service for a market gets it access to the market, which will not have been possible otherwise. The sales, marketing and channel get strong morale boost from the commitment displayed by the vendor for the local market. The buyers too feel confident to buy such a product, as it gives them a sense of being valued by the vendor. Localizing the product can help the vendor gain political mileage in the local market, giving it an edge while selling to the local government. It also gives a strong signal to the competition, or even the first-mover advantage in the local market. Above all, it provides opportunities for the vendor to get more revenues. Pre-sales support becomes a lot easier, because the buyers can relate to the product more, and can eliminate competition from vendors who are not localized. Post-sales support however poses a big challenge since it calls for huge investments in local resources and internationalized CRM systems. In open source market, post-sales support may be provided by local enthusiasts.

Issues with G11n

G11n of IT has attractive propositions, but is fraught with dangers too. G11n is an expensive exercise and not many vendors can afford it. G11n that does not meet the rules of the local government can pose geo-political risk to the vendor. Governments objecting to incorrect maps published in/on the product is a common example. G11n poses additional challenges to engineering teams and the product development cycles may become longer. Also, the product/service may not integrate/inter-operate with other products in the buyers' IT systems. The logs may appear in local languages, and this throws up a big challenge for post sales support teams if the support is not localized.

Appendix

G11n Implementation Tips for IT Vendors

- It is necessary to sign the L10n contracts with the spirit of the letter, enforceable in countries with strong and well-organized legal systems. The USA is an ideal place of arbitration, if the L10n buyer organization is based in the USA. If the place of arbitration is left open, the vendor may decide on a place that presents maximum logistical barriers to the buyer,

or a place that does not have strict IPR enforcement. For an India-based company, hiring a lawyer to fight a case in New York may cost a bomb. Worse, if the case is to be fought in Moscow.

- There is need to look at all the fine print the L10n vendors offer and compare. Take the opinion of the legal counsel. After all, not all lawyers understand technology and related IPR. If clauses are not expressed clearly, insist on making them clear and explicit. L10n vendors need not be allowed to use the translations of your product/application for their other buyers. They need to also maintain a “Chinese wall” with their clients to ensure your product/application’s confidentiality.
- Ensure that the service levels and penalty clauses are well-defined in the Service Level Agreement (SLA), and are stringent. Lack of, or slackness in the same can increase the time to market (TTM) the product/service. Longer TTM can affect adversely, and hurt the organization’s sales, market share and profits. One way is to eliminate all the vendors that do not understand the standard SLA clauses in the first round itself. If the vendor does not understand terms like response time, restore time and resolution time, do not select that vendor.
- It is good to structure the communication clearly from the first day of engagement. Provide the vendors with templates to exchange the L10n project feedback, and do not entertain any communication that does not adhere to that structure. The same condition applies to the reviewers of the work too.
- Specific to L10n, all vendors claim to use native translators and native experts, say Japan-born Japanese resident to translate from English to Japanese. There seems to be no economically easy way for the buyer to verify this claim, and interviewing the translators may help.
- If the project includes delivery of non-information-only goods such as printed manuals and hardware embedded messages, then more resources and efforts need to be planned and invested in it.
- As far as possible, it is better to have a single point of contact to interact with the vendors. This point of contact may be a leader who has excellent coordination and communication skills. This can be risky, owing to single point of failure, but if reliable, this person can streamline all communication, and reduce opportunities for errors. Empower this person adequately to act upon the situation.
- It is necessary to plan upfront for the time that may be lost due to various participants in the project not being available for reasons such as ill-health, holidays, travel and others. The L10n manager has to keep track of calendars of various countries since the L10n vendors and reviewers are globally distributed.

Notes

1. There are 11 alphabets between G & n in the word globalization.
2. There are 18 alphabets between I & n in the word internationalization.
3. There are 10 alphabets between L & n in the word localization.
4. Refer to the website www.lonelyplanet.com to look up various types of electricity connectors that can be used in different countries.
5. Refer to the article “Open source’s local heroes” article published in The Economist, 4 December 2003.
6. For more information on languages and encoding, please refer the website www.unicode.org.
7. English alphabets and numerals can be stored in ASCII format, similarly German and French can be stored in extended ASCII format (for supporting punctuations) whereas Indian, Arabic and Oriental languages need double byte formats such as Unicode.

Questions

1. What are the advantages and disadvantages of opening up an IT product to channel partners for I18n or L10n?
2. What factors can help the vendor to decide on L10n of IT products for specific markets?
3. What are the advantages and disadvantages of a minimalist approach in design, in the context of G11n?
4. What are the tools or methods that vendors can use to sell non-localized products in local markets?
5. What is the relevance of IT L10n in multi-lingual and multi-cultural societies like India?

BRANDING OF INFORMATION TECHNOLOGY PRODUCTS AND SERVICES

The Information Technology industry is peculiar in more than one ways. IT products become successful despite not being zero-defect when launched in the market. The competition between brands is so intense that you may lose your prospect to your competitor in just a click. It is more difficult to brand in the IT industry, than in many other industries.

In this chapter, we study the characteristics of branding in the IT industry—branding of products, services, cost of branding, and the tools used to propagate the brand. We further examine the phenomenon of using Internet as the branding vehicle, and people as brand ambassadors. We also try to understand the curious thought whether open source needs branding. We conclude with a discussion on collaborators that help branding, and a few rules of thumb that may come in handy while branding products and services.

Branding in the IT Industry

In many industries, we observe that a branding exercise is done to gain the buyer's trust. In the IT industry, it appears that branding is a conscious effort to build trust as well as to remove distrust in the buyer's mind¹. It is the poor performance of the IT product (and poor quality of service) and interoperability issues that make the buyers skeptical of vendors. IT vendors resort to branding to remove this distrust.

The very fragmented nature of the industry gives opportunity for brand clutter. Moreover, many companies have the practice of creating new brand identities for newer versions of the same product. More clutter, right? Since very few software products work independently, one defective product can cause malfunctioning of other products. In such cases, buyers may not be able to find the root cause, and may blame the vendors whose products may not have caused the malfunction. Such bad experiences of buyers spread far and wide over e-mails. Damage control costs the vendors dearly. This can affect the brand adversely.

Branding of IT Products

Umbrella branding of the vendor company is common, but branding of individual products is widely prevalent as well. Initially a few companies may implement umbrella branding. They move over to branding individual products when such products acquire a good market share and the buyers develop good awareness of the products. Queer as it may appear, individual brands too have sub-brands for product variants, and they tend to be very confusing. Buyers may seem confused whether to buy the “standard” version, or the “professional” version. Hardware and devices branding is particularly confusing, with products often actually carrying alphanumeric names. This is true of hand-held consumer devices too. Nokia has product brands like 8660, 9110, and buyers may find it difficult to recall those numbers. Co-branding is rare in product space. One reason for absence of co-branding is the wafer-thin profit margins. However, there are rare examples like SonyEricsson² that have established well in the market. There are unlikely co-branding partners too — like the Dell-Ferrari and Acer-Lamborghini in laptops.

Branding of IT Services

There are many prominent and conspicuous characteristics of IT service brands. Vendors’ employees themselves play a major role in branding. It is a very common sight of employees and partners of vendors wearing branded merchandise. In system integrator companies, service brands are usually subordinate to the company’s umbrella brand, owing to the low recall of service brands by buyers. Service branding is more common with large vendors. It is observed in companies where the services line operates as a profit center e.g., Sun Professional Services.

Quality is a key concern for companies that outsource their IT. To allay the buyer’s fears, outsourcing companies get themselves certified by quality organizations following standards specified by the Software Engineering Institute (SEI³), International Organization for Standardization (ISO⁴), and others. Vendors flaunt certifications like SEI-CMM Level 5, CMMi, ISO 9000, COPC⁵. Such certifications worked as differentiators in winning outsourcing deals in the past. As more and more vendors get certified, such certifications can become the selection criterion, and no longer remain as differentiators. One often wonders: is it the vendor that is benefiting from the certification, or is it the certification agency (that is mentioned in marketing documents) that is benefiting? There is hardly any example of co-branding of IT services. This is because employees of a sub-contractor are made to work for the contractor (the process described as “re-badging”), and positioned as “consultants” to the buyer.

Cost of Branding IT Products and Services

Branding costs a lot to organizations and can also bring in enormous benefits. Branding significantly reduces the cost of buyer acquisition. It also reduces the cost of new product introduction, especially significant in the IT industry since technology changes at fast pace and new product introductions are frequent. From another perspective, the short life span of IT products increases branding costs, and money spent on branding products can soon go waste. Thus the necessity arises for having companies as umbrella brands, and products as subordinate brands. In devices market, the product lines are branded instead of individual products, to keep the branding cost low. An example for this practice is that Nokia brands “N Series” instead of individual mobile phones of the corresponding product line.

If the branding is not intuitive, it can cost vendors dearly. As it is, there are many operating systems (which, in turn, have many versions), and software application compatibility is difficult to achieve easily. If the brand names are not intuitive, then the sales and channel can erroneously misquote the price or specifications and later ship the wrong product. Rectifying such mistakes can become a headache for the logistics departments and cause unpleasant experiences to the buyers.

An expense that vendors cannot ignore is that of managing technology analysts. These analysts can write unfavourable reviews of the product of vendors that they dislike and can increase the vendor’s Public Relations (PR) costs. Enthusiastic hackers too may hack into the software and expose security loopholes. Damage control PR exercise on such hackings can turn out to be very expensive for the vendors.

Tools for IT Branding

Many tools and entities are employed to brand IT products and services. Some of them are listed below.

- Interactive branding
 - IT products as prizes in target-market competitions
 - Screen savers
 - Publishing books on technology is great branding
 - Product training certifications as brand vehicles, benchmarks
 - Complementary branding from partners
 - Training institutes
 - Channel
 - Merchandise for retail such as:
 - Dolls (Tux, Intel Bunnies)
 - T-Shirts, hats
 - Wind cheaters (Sun)
 - Umbrellas (Netscape)

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- Corporate merchandise
 - Day planners
 - Mouse pads
 - Anti-glare screens
 - Cuff links (Intel, made from defective Pentium processors), tie pins (Macromedia)
- Corporate sponsorships
 - Developer events
 - “Power Breakfast” sessions for top managements
 - Hosting CXO conferences
 - Quizzes
 - Career fairs
 - Trade shows/road shows. These are good opportunities to engage with interested buyers.
 - Academia/people that influence IT purchase decisions
 - Sponsored research
 - “Independent” analysts
 - PR firms
 - Vendor speaking sessions in technology conferences. Organizers usually provide such speaking slots to sponsoring vendors
- Pre-sales marketing collaterals
 - Silver bullets (to counter specific features of competitors)
 - Competitor’s vulnerabilities (Oracle’s comparative advertising)
 - Success stories/case studies
 - White papers
 - E-mail newsletters

Even partners are encouraged to sponsor the vendor events. For example, Tata Consultancy Services has sponsored webMethods events. We can understand more on the role of pre-sales in IT marketing from the corresponding chapter.

Internet as Branding Medium for IT

The Internet is increasingly becoming a necessary and strong medium of advertising, not just for the IT industry, but for many others. Traditional media like print and television are becoming threatened by the rise of the Internet as the new advertisement medium. This is because the Internet allows vendors to do focussed advertising and get maximum returns on their advertising expenditure. IT companies are driven by expediency and short product life/service delivery cycles. With its ability to shrink time and distance, the Internet has become a medium of choice for branding products and services. Negotiations can be cut short and sales cycles shortened by building business rules that can offer dynamic pricing on the Web⁶.

IT industry, the information content industry (publishing) and entertainment industry can not only brand their wares on the Internet, but also deliver them on the same medium too. What better branding medium than the delivery vehicle itself?

Comparative advertising is prevalent in the IT industry, with vendors often comparing against competition based on features. Oracle has often compared itself against Microsoft. Some vendors offer free guides on their websites to migrate the buyer's IT systems from a competitor's to theirs.

Measuring the Strength of IT Brands on the Web

There are many ways of measuring a brand's strength on the Internet. Some of them, (including some by way of questions) in the context of IT companies, are listed below.

- Sales leads generated on the Internet, through "Contact us" page and e-mails
- Search results. For example, does a search on the word "offshoring" in Google show "Wipro" as a search result? If so, is it in the first 10 results? How many results do popular search engines yield when your company's name is searched?
- How many users are registered on the user group sites of the vendor? What is the number of buyer queries that get answered by advanced buyers without the interference of the vendor?
- Do other vendor sites link with the vendor's site through web services for automatically accessing software such as plug-ins? For example, many browsers look up Adobe website for the Flash player plug-in if the user has not already installed, or has an older version. Such linking may help increase the product install base.
- How many users are interested in the vendor's news? How many of them have actively subscribed to the vendor's e-mail newsletters?
- How many users download software and freebies like logos, screen savers, trial software from the vendor's website?
- How many candidates apply to the vendor organization through websites (vendor's or partner's websites). Website initiated recruitment saves costs that companies may incur while using other channels.
- Does the vendor address partners and buyers through webcasts⁷? Such webcasts can save substantial marketing money compared to alternatives.

Apart from the above, vendors use the conventional means such as regularly updating their websites, offering web-based contests with prizes, running ticker / banner advertisements on the website, and publishing marketing collaterals for download on the website.

Some parameters that vendors use to build the IT brands are as follows:

- Compatibility with other products: This is where the standards come in handy. It has a bearing on the market share too, since vendors may prefer

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to make their products compatible with many relevant products, and buyers can feel comfortable with standards.

- **Certification:** Particularly useful for service vendors since certification serves as a proxy for the quality of service.
- **Buyer references:** These are very useful when buyers like to get first hand information from current users. It is a common practice in the IT industry to offer discounts on future purchases to the buyers who agree to be referred.
- **Research reports:** Vendors often quote “independent” research reports that are in their favour.

People as Brand Ambassadors

The IT industry has made the best use of people as its brand ambassadors. It is surprising to note that the IT industry does not have widespread affiliation to trade unions⁸. The reason for this partly being the availability of opportunities for technically skilled engineers, and the belated acceptance of the effects of globalization. Also, trade unions may have contributed to the tarnishing of the brand image of companies in other industries in the past. Keeping social matters aside, let us discuss the use of people as the flag bearers of the IT brands.

The simplest form of people-driven branding is to give them company merchandise, such as T-shirts, shirts, caps, ties and others. These people can be employees, their family members, partners, analysts and others. Another form of mutually beneficial branding is “Certifying” professionals. Companies conduct exams, and professionals in the IT industry opt to qualify in these exams and get certified by the vendor as skilled on the vendor’s products and services. Professionals use such certification to differentiate their skills with the certification logos on their résumés, and to further their careers.

Despite the people-reliance on branding of IT, it is surprising to note that (thankfully) the IT industry rarely uses celebrities to endorse products and services—the notable exceptions to this practice being Tiger Woods endorsing Accenture, and a few others.

Buyer-endorsement based advertising is common, with the CXOs of buyer organizations endorsing vendor brands. The example for this arrangement of advertising is the HP advertisement that features its buyers (Hollywood movie studios), and Sun Microsystems featuring its buyers such as Citibank. Vendors sometimes provide their products free to academia as academics can be strong decision influencers in government and education sector purchases.

IT services, like in other industries, are people-centric. Hence every employee offering an IT service, from sales to buyer support, contributes in branding. Such services can be for long durations in the IT industry and hence, safe-guarding the brand image becomes more critical for IT services vendors. Attrition of employees can affect branding of IT companies, as higher attrition rate than industry average may mean unfavourable coverage in the media and bad PR.

Does Open Source Need Branding?

So far, we have discussed branding in commercial IT. However, open source too forms a significant part of the IT industry. Is branding relevant to open source? If it is, then who owns this activity? Is there a budget? Is there a helping hand? Let us try to answer some of these questions.

There are many open source projects such as GNU⁹ Linux, OpenLDAP¹⁰, OpenOffice.org and Eclipse¹¹. Open source movements are generally initiated by an individual or a few, and in a few cases, by companies. The notable examples of individuals are Richard Stallman and Linus Torvalds, and those of companies are IBM and Sun Microsystems. The first steps for individuals include activities like subscription to newsgroups and relevant technology communities on the web. The interactions on such community sites create a network effect¹² that later grows into a movement with a dedicated community of users. It is the word-of-mouth that spreads on the Internet that grows the open source brand. A significant trait of open source branding is that it is collaborative. The open source brand persona of “freedom” is very strong indeed.

Many open source projects that did not establish their brands have failed, or stopped midway. The open source moderator usually takes the initial responsibility of branding the open source — the moderator being an individual, a committee or a sponsoring company. Funds for branding are raised by way of soliciting donations from users, selling merchandise, and by seeking corporate sponsorship. The brand mascots serve as the icons on the merchandise. Since open source products generally tend to be very reliable, the user experience itself contributes to the word-of-mouth branding. Universities too contribute towards branding of open source by offering mirror sites for downloading the open source products. In the IT world, contribution by companies to the open source community can be considered as acts of “Corporate Social Responsibility”.

Brand Collaborators

An interesting phenomenon of the IT markets is the presence of a large number of brand collaborators. Vendors have their own publishing arms that publish books and training material on their offerings. These publications can aid in promoting usage of the vendor’s products, and also serve as prescribed reading for “certification exams”. Such an arm reduces the direct cost of branding while simultaneously generating revenue.

Many companies also run their own universities to propagate their own school of thought and communicate their vision. The graduates of these universities may eventually be absorbed as employees of the parent companies. Some such universities are owned by Oracle, Motorola¹³ and Wipro. There are

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many third-party training institutes that train engineers on various products and technologies, and contribute towards branding of those products.

Publishers of technology magazines also contribute to branding of IT. So do television channels that compare products and companies. Aren't the stock tickers on business theme TV channels contributing to branding of the companies? The stock ticker of the US and European stock markets was a major factor that made the IT vendors from other countries list in those geographies. Their stock details being shown on the ticker created awareness in the minds of buyers in those geographies, making it easier for these vendors to market their offerings. Such stock tickers have aided many Indian software services vendors and contributed immensely to getting large offshore projects.

Independent Software Vendors (ISVs) who provide compatible software also contribute indirectly to the branding of other vendors. Their product data sheets contain names and versions of compatible hardware and software. A few vendors even go to the extent of specifying that their hardware or software is optimized for other hardware or software — most commonly observed in application software that are optimized for specific operating systems. It is interesting to note that many PC and server vendors were offering their products pre-installed with Windows OS. They advertised that their computers “come pre-installed with Windows XP”. This strongly contributed not only to an increase in Windows' market share, but also to the branding of the OS. However, with objections raised against consumers not being given an option to choose their favourite OS, these vendors moved away from “Windows-only” pre-installation, yet continued to support Windows branding by suggesting “vendor recommends Windows Vista (or earlier, XP)” in their advertisements. It is another matter altogether that these vendors have yielded to the demands of the buyers and have started offering Linux pre-installation as well. System integration and application development vendors also add emphasis on brands of products that they offer their services on.

Do writers of viruses and programming hacks contribute to branding? Definitely such publicity is undesired and unwelcome to any vendor. The vendors may offer patches and security updates, but must recognize the immense harm the patches do to their branding efforts.

Software that is offered as download from the Internet sites like www.download.com too assists in growing the brand. Such sites not only track the number of downloads, but also offer a platform for users to share their experiences and opinions with fellow users, and the public.

Thumb Rules for IT Branding

- Just like in other industries, IT industry too should offer good quality products and services. Good branding cannot compensate for lack of quality.

- Branding is a necessary and expensive evil to the vendor. It is absolutely necessary to use the low-cost medium viz., the Internet.
- Quality contributes to the longevity of any brand. Good post-sales support is necessary too.
- Branding costs, but also saves. The new product launches become less expensive if an umbrella brand has been established.
- In the little differentiated hardware (servers, desktops) market, the brand is a valuable differentiator that can fetch a premium price
- The IT industry has maximum variety of collaborators, as compared to any other industry; vendors need to make best use of them
- The market share reinforces the brand, and standards strongly depend on the market share in the IT industry.

Notes

1. A very common term in the IT industry is “Vaporware,” used to describe the promises that IT companies make to their buyers but never keep.
2. <http://www.sonyericsson.com>
3. <http://www.sei.cmu.edu>
4. <http://www.iso.org>
5. <http://www.copc.com>, for call centers
6. Some shopping sites pop up additional discounts to buyers if the latter try to navigate away from the shopping page after crossing some stages of purchase-decision. You can press browser’s “back” button on shopping sites after selecting products and, if you are lucky, you may get more discounts.
7. Webcasts are audio-visual live broadcasts on the Internet that are made to restricted user groups, usually buyers and partners. They can be stored and viewed at leisure too.
8. Washington Alliance of Technology Workers (www.washtech.org) and other IT trade unions have started in recent years, definitely the strength of trade unions has diminished in since the early 1990s.
9. <http://www.gnu.org>
10. <http://www.openldap.org>
11. <http://www.eclipse.org>
12. A variant of this effect is viral- marketing. Remember the “Sign up for a free e-mail account with Hotmail” campaign that appended with every e-mail sent from the Hotmail account in mid 1990s? This is how Hotmail can make so many users sign up.
13. <http://www.motorola.com>

Questions

1. How do open source brands become popular with seemingly little or no financial backing, while commercial vendors spend large amounts to popularize their brands?
2. Is the print medium appropriate for branding of IT products?
3. If security issues are discovered in an IT product, how do you quantify the impact of bad publicity generated on the product's brand?
4. How appropriate is the usage of celebrities to endorse IT brands? What are the advantages, and what are the pitfalls?
5. Do creators of mods (modifications / hacks) and pirates play any role in brand proliferation?
6. What is the impact of subsidizing IT products (for example – for teachers, students, etc.), on the proliferation of the brand? What cost does the company incur by doing so?

ROLE OF TECHNICAL MARKETING IN INFORMATION TECHNOLOGY

Pre-sales or Technical Marketing (TM) is a distinct function in IT Marketing which is not seen in many other markets. It can be called unique or queer, depending on one's perspective. In this chapter, we will understand the definition of TM function and why IT vendors require such a function. We will also understand the criteria for offering support to buyers before the sale, and the business unit structure that is built to enable this function. We will identify similarities and differences between TM responsibilities in products, and services marketing. We will also look at the skill sets required, and the tools developed and used in this function. We will also look at the peripheral activities of TM staff, and the gains for companies from the TM function.

Definition of TM

It is a sales enabler function and not sales function per se. The domain of IT is vast, and many users, including home users, customize the IT products they buy. Also, IT is a horizontal domain in the sense that it is employed in various industries that IT addresses. Hence, it is common practice among IT vendors to support their sales staff with TM staff, to augment the sales staff with technology and domain knowledge.

There are many interesting stages in the TM cycle. The responsibilities of the TM staff begin with the qualifying of the sales lead received by the vendor. Such a lead can be from the sales staff, channel partners, technology partners, and from the inside sales staff (it tracks and works on leads received on the company's web site). The qualification of these leads can be based on many criteria, such as the vendor's prior experience, market intelligence (whether the buyer is an "all Microsoft shop", "all Oracle shop"), technical compatibility, and many others. The TM staff works with the sales function till the buyer decides on the purchase. The TM staff does not carry the revenue target, unlike the sales staff. Instead, it carries targets such as lead-to-order conversion rate,

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cost of TM activity, public relations successes etc. The TM function ends with the signing of the contract/purchase order (if the sale is successful). TM staff does not have the responsibility of product or service delivery. The post-sales technical support team then takes on the work.

Business Division Structure

To understand the TM function a bit better, let us analyze its position in the vendor's organization.

In most organizations, sales and the TM functions are managed by a single corporate executive. This means that a Geography Manager (NA, South America, EMEA, South Asia, Asia-Pacific) may have the responsibility of managing both sales and marketing for that region. Sales function is a profit centre while TM function is generally treated as a cost centre. The Geography Manager provides funds to the Country Manager to run the TM function. The Country Manager will have a TM Head reporting to him/her at the Head Office. The Regional Managers (in Regional Offices) report to the Country Manager. TM Engineers based in the region report structurally to the Regional Managers, and functionally to the TM Head at the Head Office. The TM staff collectively has the responsibility of training sales staff and channel partners. TM Engineers are treated on par with the sales executives, but it is the sales staff that calls the shots most often. The sales staff gets commissions and incentives, while the TM staff rarely gets; instead vendors usually offer a fixed pay and a variable pay that depends on the business division's performance.

Criteria for Pre-sales Support

Do all buyers require TM support? No. Different buyers need to be treated differently. A few buyers may be existing buyers, and so the sales person may be familiar with their business, thus requiring less support from the TM staff. A few others may know the product or service so well that they do not need TM assistance.

Do all products/services necessitate TM support? Unlikely. Many IT products for home offer plug-and-play installation features such that no support may be required.

How can the TM staff qualify the leads? Some criteria used are as follows:

- The buyer's knowledge of the product or service.
- Buyer's business requirements.
- Price propensity; if the buyer seems to be willing to spend a little more money, the TM staff too goes the extra mile.
- Complexity of the ware to be sold — experiential products, credence goods.
- Buyer's worth, future purchase potential.

- Competition — positioning of one's goods and services may often be decided by competition's positioning.

Responsibilities of TM Staff in Product Marketing

The TM staff has to work with multiple entities in both the vendor and buyer organizations. Accordingly, the expectations from these entities may be varied. Here is an indicative list of the responsibilities of the TM staff:

- Understanding the business need of buyers/leads. This helps in qualifying the sales lead.
- Making presentations to the buyer entities such as CXOs, Program Managers, Project Managers, Engineers, Quality Assurance staff etc. Such presentations need to be audience-specific. A software engineer may be interested in the features while the CXO may more likely be influenced by financial details. And the Project Manager may be interested in tools that are likely to improve productivity and rapid development of applications.
- Comparison of competing products and sharing with buyers. There are many tools used, and they are discussed in detail a little later.
- Educating the sales staff on new launches, upgrades, benefits. Note that the IT industry is plagued by ever-changing standards and regular stream of upgrades, patches and other releases, and such education becomes a regular, intensive activity.
- Participation in road shows/launches and speaking vendor slots in various forums.
- Preparing the Return on Investment (RoI) model for fresh investments from the buyer, and Total Cost of Ownership (TCO) model for IT maintenance requirements, and showcasing the vendor's superiority against competition on these parameters.
- Audience-specific demonstration of prototypes/sample applications, both at buyer locations and at road shows.
- Exploring the product/service compatibility. IT products rarely work in isolation in the actual deployment scenarios. They have to work with IT from other vendors, preferably with as little help as possible. Hence, the TM staff needs to simulate the buyer's IT environment and check the compatibility with the vendor's product. In case of services, the TM person has to study the IT standards followed by the buyer and prepare the vendor's service staff to adhere to those standards.
- Many buyers emphasize the quality of the post-sales support to be provided by the vendor. Buyers often tend to be skeptical in this matter. Such skepticism stems from the fact that many IT products are defective, may not inter-operate within the buyer's IT, and the delay or shortfall in the quality of the vendor's post-sales support may result in enormous opportunity cost. It becomes the onus of the TM person to convince such buyers on the vendor organization's post-sales support quality. Buyers

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find interacting with well-qualified TM staff comforting as well as trustworthy. They are perceived by buyers to be independent thinking and technically a lot more credible than the sales staff.

- Public Relations (PR) is a very important component of pre-sales function. This can include briefing analysts in various research firms like Gartner, Forrester Research, IDC, Butler Group, Yankee Group, and many others. The TM staff also addresses in forums like software developer conferences, technology workshops, CXO meets and the like, to present the vision, technology path and product road map to the audience. PR plays a very strong role in IT purchase decisions. It is the TM staff that addresses the technology academia regularly on the product/service offerings.
- Many academicians influence¹ the IT purchase decisions of governments in many countries. The TM staff plays a key role in such PR exercises of building relationship with academia.
- Very often, the TM staff works as a technical resource pool clarifying queries of buyers. This is to help the buyers arrive at a decision that is favorable to the vendor. It is to be noted that such support is provided only till the buyer places the purchase order on the vendor. Once the vendor receives the order, that support becomes the duty of post-sales technical support staff.
- Buyers find it difficult to arrive at the size of the enterprise software. This is because the buyer may not be aware of the licensing policies relating to of the products to be purchased, capacity of the hardware that underlies the software, throughput of the software, disaster recovery management, suitable technical architecture, alternatives available, and such parameters. Sales staff usually solicits the skills of the TM staff to propose the solutions that are optimal to the buyers.
- The TM staff usually develops rapport with existing satisfied buyers to use them as references in future deals. It also succeeds in enticing such buyers to write testimonials endorsing the product. Some succeed beyond, and make joint statements in the press and co-sponsor events, as well as air commercials².
- The TM staff keeps in touch with the buyers by establishing buyer-loyalty web forums, and mailing lists. The staff can also moderate the content on such websites. These sites can also serve as references and testimonials for buyers.

Responsibilities of TM Staff in Services Marketing

Tasks such as understanding the business needs of the buyer, qualifying the lead, comparison with competing vendors, and comparison with solutions proposed by competition are the responsibilities of the TM staff in service sales too. Here again, the TM staff is expected to make presentations to audiences

like CXOs, business users (end users), and in road shows/launches/vendor slots. However, responding to “Request For Information” (RFI), and “Request For Proposal” (RFP) is a bigger task of the TM staff in service sales. This is partly because of the multitude of parameters in service requirements, and vendors being expected to provide approach notes to the business issues. Many large service RFPs are drafted by an entity³ outside of the buyer organization to specify parameters that make the task of comparison of vendors easier to the buyer. The ROI, TCO and year-on-year (YOY) productivity modeling is more difficult in service marketing than in product marketing, and it is the responsibility of the TM staff to evolve such models that are favorable to the vendor.

A few buyers may have existing vendors for IT services. If a newly selected vendor needs to replace the existing vendor, the buyer expects the transition to be smooth without any adverse impact on the business. Proposing for such contracts may include phases like transition, and steady state with specific SLAs for each of those phases. It is the responsibility of the TM staff to quantify costs associated with those phases and put forth a compelling proposition to the buyer. Large IT service vendors create “large bids staff” to deal with such buyers. Such staff comprises domain specialists and TM staff. They work with the delivery staff in understanding the scope, and sizing the bid. They later provide assistance to the sales staff on pricing by explaining various factors involved, and what can be the best alternative to losing the contract.

IT service contracts, big or small, are rarely awarded without conducting a referencing check the vendor’s existing buyers. It is the TM staff that coordinates interaction between existing buyers and the prospective buyer; the prospective buyer then verifies the claims made by the vendor and gets feedback from the existing buyers on the quality of service delivered.

Briefing analysts is somewhat of a routine job of the TM staff in the service companies. With limited differentiators that exist in the IT service industry, vendors clamor for PR, especially by participating in various exercises conducted by the analyst firms that are perceived to be unbiased and independent. It is very common to see such firms extending liberal hospitality to the analysts who visit them.

Other TM Activities

- Preparation of case studies (also called success stories), including buyer quotes and endorsements.
- Preparation of service offerings documents, especially repackaging of old services under new guise.
- Identification of long term trends in the product/service market-space, and assisting the management in taking the correct course.
- Identification of basket of offerings — products and services that could be hot sellers in the market in the short term.

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- Training other divisions, and any pre-sales training of buyer staff.
- Training channel partners, and conducting partner certification tests.
- Liaising with other vendors in the market for providing complete solution or service to the buyers.
- Installation and configuration of products/solutions before sales, for demonstration.
- Cross-selling, up-selling of products and services

Skills Required for TM Function

Technical marketing, as the name denotes, is a cross-domain function. The TM staff needs to have a good breadth of technology, that is, various standards and products that may exist in a technology market-space. They should have enough technological depth to counter competition in the market. They also need to have good business skills across industries, and the knowledge of application of technology to various industries. They should have good quantitative skills to quickly work on the financial aspect of any deal. Very good communication skills — written and oral, are absolutely necessary. Understanding of legal matters too may come in handy while working on SLAs.

The TM function is peer to the sales function in an organization. It is difficult to manage peers, especially peer sales staff. Also, perseverance is a necessity to sail through the sales cycle. Clarity of function is necessary; the TM staff must know when to start and when to stop. Very helpful TM staff may be conned by the sales function into offering free post-sales support.

Tools Used in TM

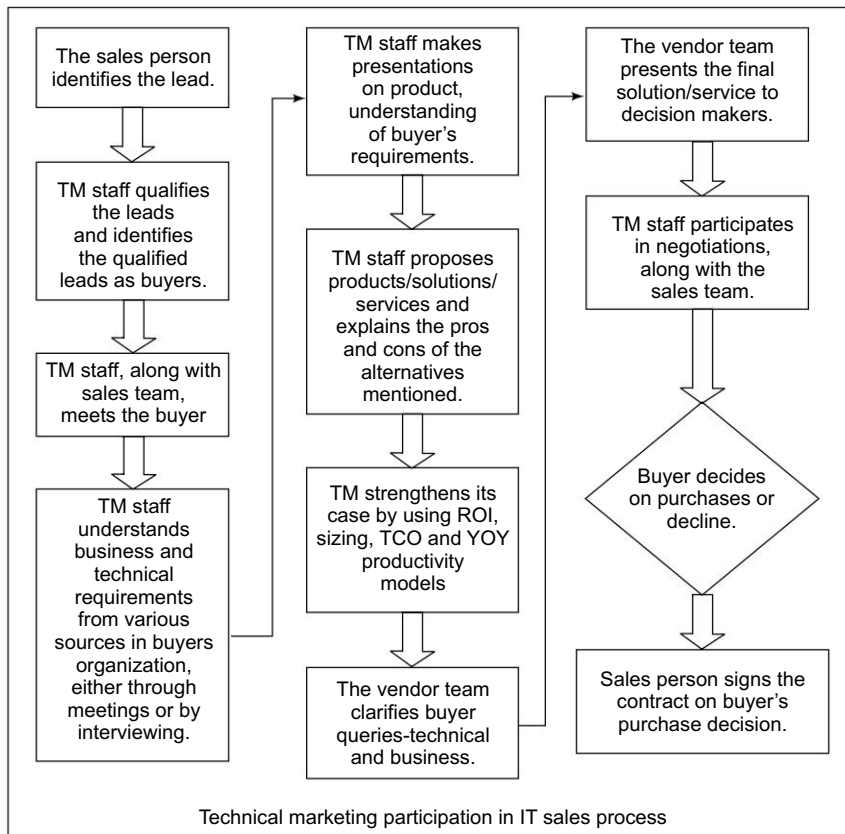
The TM staff members use a variety of tools that aid them in their daily work, and increase their success in winning contracts.

- The TM staff needs to address diverse audiences starting from software engineers to CXOs. Obviously, each of these audiences has interests that may not necessarily be the same for others. Hence, the TM staff needs to make customized presentations to each of these on separate occasions with appropriate content.
- The TM staff develops financial models — on TCO, RoI, YoY productivity, and many other aspects to position the product or service better than competition in the buyer's mind.
- Brochures and collaterals are designed (sometimes outsourced to PR firms) and distributed to the buyers to better explain the offering.
- Silver bullets are authored by the TM staff for internal circulation only. Silver bullets are documents containing specific points to counter competition. They could be information on features, strategic investments, market share, corporate sponsorship for the product/service, and anything that can show competition in bad light.

- White papers are documents authored by the TM staff. They are seemingly unbiased documents that explain a technology or a concept. However, in most cases, white papers covertly talk a lot on the company's product or service and application in various industries.
- Commendations from existing and past buyers are considered the best tool to ensure winning of the buyer's trust. Such commendations are usually in the form of quotes, but it is now common to see buyers appreciating the vendors in propaganda videos. Most vendors offer better discounts in subsequent deals to those buyers that agree to endorse the vendor.
- Analyst ratings come in the form of Gartner Magic Quadrant, Forrester TechRankings and the like. These are often displayed to the buyer to show the relative superiority of the vendor as compared to the competition.
- In IT products, it is a standard practice to quote independent performance benchmarks and commendations received from the benchmarking firms. Parameters mentioned in such benchmarks help in sizing the IT requirements of the buyers.

TM Stages in Marketing Cycle

A typical Technical Marketing cycle is illustrated below, in the chronological order.



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There are three possible outcomes of the marketing effort: successful sale, losing to competition, and the buyer shelving the requirement (indefinitely postponing the purchase decision). In companies with best practices, every marketing effort is recorded for analysis, with clear details on why a buyer was lost to competition, or why the offering failed to convince the buyer to make an immediate purchase decision. These details can aid the engineering staff in delivering buyer-focused products and services.

How do IT Vendors Benefit from TM Staff?

There are various benefits that IT companies earn by employing TM staff. Some of them are explained below.

- The TM staff does value selling. Some sales staff may have the notion that sales can be made or increased by lowering the price. Such notion may exist because performance bonuses of many sales staff are dependent on the revenue, and not profits they bring in to the organization. In a rush to sell, the sales staff may under-communicate the goodness of the offering, and use lower price as a tool to speed up the deal. Thus, good products and services may not get the value they deserve in the market. It is the TM staff that communicates the value proposition to the buyers and helps the vendor to make the sale and command a premium over competition. This will enhance profitability by avoiding the price war. Such a value selling also conveys benefits to buyers than hard selling products/services, as hard selling is unwelcome to many buyers.
- Companies can hire staff with techno-commercial skills to address different industries, though such staff is difficult to find. However, employing such staff for TM can help the organization to discover new buyers in hitherto unaddressed markets.
- The TM staff has to be consciously built with people of broad-based knowledge. This can dramatically improve the time taken to respond to buyers' queries, thereby reducing the sales cycle period.
- The TM staff can participate in various vendor forums and partner forums. This helps in building the organization's image in the market. TM staff costs a lot less than hiring PR firms to do the same.
- Since the TM staff understands both technology and business, they are well placed to come up with the most creative solutions that can benefit the buyers immensely. They also improve the buyers' confidence in the vendor, and can help bring in repeat orders

Issues with TM Function

At first, the TM job may look diverse and interesting. It is a challenging one too. In many organizations the sales staff has a stronger say in decision-making than the TM staff. This may hinder growth plans of the TM staff. The diverse nature of work makes it difficult to quantify the efforts and output. The TM

staff may be blamed for lost deals for no fault of theirs. Training of TM staff is viewed as an expense that need not be incurred. This makes it difficult for TM staff to keep abreast in all of technology, domain and functional knowledge. The technical staff in buyer organizations may be skeptical of the TM staff for lack of technology depth as compared to themselves.

Issues with TM Careers

In many organizations, the TM staff does not get commissions. Hence, the TM function may not be as financially rewarding as sales. Few companies consciously invest in TM staff, and the growth path may hit a ceiling in some companies. The TM staff may have identity crisis for neither being completely technical, nor being completely commercial at work. In sales-driven business divisions, TM is viewed as a support/non-billable function, or overheads. Thus, TM is likely to be downsized in bad times.

Benefits of TM Careers

On the upside, there are quite a few benefits of TM careers. The TM staff can be knowledgeable in technology, domain and function simultaneously. They get to meet diverse buyers across industries. Travel is an added perk, if the staff likes it. The job does offer flexibility in choosing the next career path, and ample room for creativity.

Notes

1. Companies also give their products free to academic institutions to gather the mind share of these academicians.
2. An example that comes to the top of the mind is the “Sun never sets, and Citi never sleeps” advertisement campaign launched by Sun with quotes from the managers of its buyer, Citibank.
3. Usually, such outside entity is not allowed to bid for offering the service itself, to avoid any conflict of interest.
4. <http://www.skype.com>

Questions

1. Can good quality interactive learning resources (rich Internet applications such as product usage videos, sample applications and tutorials) eliminate the need for TM function in IT markets?
2. What are the advantages and disadvantages of using public sites such as YouTube for promoting IT products and services?
3. What role does the Internet play in the TM function?
4. How can the usage of services such as Skype⁴ assist in TM function?
5. Can simplification of IT lead to elimination of the TM function?

LAUNCHING OF INFORMATION TECHNOLOGY PRODUCTS AND SERVICES

In this chapter, we will discuss important, but not necessarily the final stage of an IT product/service life cycle viz., the Launch. The launch is the result of a combined effort of various teams, such as engineering, technical support, marketing, sales and executive sponsors. We will discuss the characteristics of the launch of products and services in detail. We will also compare the characteristics of product launch and service launch. Re-launch of IT is discussed as well. As launch of IT is not an isolated activity, the activities that precede and succeed it, and their importance, are discussed in detail.

Definition of IT Product Launch

A product is said to be launched when it is available as an independent package, or a Stock Keeping Unit (SKU) in the market. The channel of launch is immaterial, and so is the price, for the price is usually specific to every sale. The product may be made available to buyers on web, from retail outlets, exclusive company-owned stores, channel partners, or any other way. The launch may be of a new product or an upgrade to (new version of) an existing product. The launch may also indicate a product extension, or an add-on to a product that has existed in the market (not necessarily from the same vendor). In the case of software, the distribution of the launched product may be silent or voluntary. Silent upgrade is how an older version of a product is upgraded to the latest version, over the network; the user may be informed of the available upgrade and prior consent may be obtained. Product extensions/add-on modules can also be upgraded silently. For example, many instant messaging (IM) clients from vendors such as Google, Yahoo¹ and Microsoft download and install the latest launched version, after seeking the user's consent. Voluntary upgrade is when the user acquires the new version of the product from the market and upgrades the existing version. Hardware upgrade is always voluntary.

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The launch can also be simultaneous, as in the case of a vendor launching a collection of its products (called the suite), like the Creative Suite 3 of Adobe². Such a suite launch usually encourages buyers to buy the suite instead of individual products within the suite, by pricing the suite lower than the sum price of all the individual products in it. If, in the user's usage, the individual products are used in sequence to perform specific activities (say, video capture, video editing, audio creation, audio mixing and subtitling), then it makes sense for the vendor to launch suites, and for buyers to buy the suite.

Characteristics of IT Product Launch

There are various characteristics and peculiarities of IT product launches. For example, the buyer may not throw away the old product, and continue to use it even after purchasing the new one. This can happen for a few reasons, such as the following:

- **Incompatibility:** The old standard may not work with the new standard, but the vendor usually provides a workaround or a fix (like in Microsoft Office™).
- **Missing feature:** Vendors may consciously or unconsciously drop a feature that may be of importance to the user. In such cases, the user tends to retain the old product as long as possible.
- **Disappointment with the new product:** the product may not live up to the vendor-created buzz prior to the launch or to the expectations the users may have built. This creates dissatisfaction among the users, leads them to shun the new product and continue using the old one.

The vendor has to provide an “upgrade path” or “migration path” for retaining the existing buyer/user base. If the underlying theme of the new version remains the same as of its predecessor, then the vendor has to provide an upgrade path. The upgrade path is an enhancement to make old assets (content or data) inter-operate with the new product. If the theme changes, then the vendor has to provide a migration path where all the old assets can be transformed into the new form. In either case, the vendor has to take precautions to avoid any compatibility or migration issues. Such issues can cause severe loss of historic investment of the buyer in the form of non-usability of old assets, non-audit-ability and waste of historic efforts.

Migration path may also be provided to combat competition. For example, a vendor may publish simple steps to move user's to its products and away from a competitor's product. So, the vendor may provide a migration tool and corresponding documentation, simultaneously reinforcing the message with a comparative advertising campaign against the vendor.

Product launches may have accompanying service launches, such as technical support services with new SLAs or pricing structures. A few product launches may require the domain experts to endorse, if the product is targeted to a specific domain.

Definition of IT Service Launch

A service launch can be defined as a new offering in the market, either in a new area, around a new product, or even a new concept. Typically, services evolve around the behavioural necessities of users. For example, the services of call centers are inventions of the twentieth century. Technical support service was necessitated by complexities of business and the legal framework that made vendors commit a level of service to the buyers.

The necessity of a service may be related to an IT product. A service vendor may bank on the existing base of the users of a product, and vice-versa. Sometimes IT services may be bundled or unbundled to create newer service offerings. Many telecommunication service providers may call their service offerings as product offerings.

There are other instances where service vendors from two different industries tie up to offer a common service to the buyers. It is very common that mobile phone service providers tie up with portals, such as Yahoo or MSN, to provide information and news content to the users of mobile phones. Such services are commonly called, “value added services”, as their contents are supposed to add value to the otherwise simple telephone service. In the recent past, some of the mobile phone manufacturers like Nokia³ have formed alliances with mobile phone service providers and television (TV) broadcasters to offer TV programs on handheld devices (called smart phones), using the DVB-H standard⁴. Similarly, TV broadcasters are forming alliances with broadband service providers to stream programs to homes using the IPTV standards⁵.

Characteristics of IT Service Launch

Many services need the target buyers to be educated much before the launch. This may begin with the marketing of the concept behind the service. For example, before beginning the Direct-to-Home (DTH) broadcasting service, the vendors have to educate the buyers on the advantages of DTH over cable TV, the pricing and the requirement of a set-top box. Similarly, IT service vendors have to educate corporate buyers on the advantages that their services offer and how the buyers can benefit availing those services. New services may be launched for regulatory requirements of the buyers — such as IT audit required for Sarbanes Oxley Act (SOX)⁶ compliance. IT service vendors may be positioned well to extend their services to include SOX audit. Typically, service vendors may launch services with pricing models such as per seat basis, per call resolution basis (in call centers), per bug fixed (application maintenance), per line of code changed (popular during Y2K bug fix days in the late 1990s), per IT asset (in audits, security vulnerability testing) and many others, including various combinations thereof.

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It is to be noted that many service launches require new products to be launched or used at the buyer's premises. For example, for launch of services such as fixed line broadband and IPTV, new buyer premises equipment such as modems, routers and IPTV receivers may be required. Hence, many service providers and equipment vendors co-launch the market offering. An example of co-launch is the launch of Apple's⁷ iPhone with Cingular's⁸ mobile phone service.

Comparison of IT Product and Service Launch

An IT product launch is very likely to be simpler than a service launch. This is because it is simpler to communicate product benefits to users than to communicate service benefits. The pricing too is simpler, depending on the variant. Both product and service may need third party pre-launch review and review post-launch. One company that has quite secretly guarded its products and services till the official launch is Apple.

Pre-requisites for IT Launch

The product launch has to be planned well, beginning with the concept acceptance or current market scenario, as applicable. During engineering, the product may need to undergo beta, or trials to ensure whether the product fares well in the buyer's infrastructure and usage pattern. The product or service has to be whetted by the legal department to ensure the offerings legal compliance in the target markets. Such legal advice is required to avoid last minute surprises and losses. Localization of IT is required for selling in non-native markets. In case of co-launch, the technological readiness of the partner needs to be ascertained. Many IT products work with other products in an ecosystem. Ensuring that the product inter-operates with other products in the ecosystem is a necessity. Marketing communication is an absolute necessity to convey benefits of the product to the target buyers. Hence, a suitable marketing budget has to be secured in advance. For IT products, training of the technical support staff and partners, on the new product is a special requirement. Such training is absolute necessity to manage a surge in the queries that reach the vendor as soon as the product or service is launched. Since many IT products and services impact the buyers' partners and buyers, a quick assessment of their IT maturity levels and standards (or the lack of) may need to be made, and all of them may have to be brought on the same level of IT competence. Device vendors may need to work with the content tool vendors to support applicable formats and standards on their devices. Finally, every vendor has to make best use of the Internet as a channel to promote the product before and after the launch.

Re-launch of IT Products

A few products may have failed for a variety of reasons. Business reasons may necessitate a re-launch of the product. A product may be re-launched as a part

of a suite of products. This is a typical up-sell tactic. Re-launching of a product may involve some discounting. Sometimes a product may be re-launched by sweetening the sale with a bundled support service. This tactic is used to bring back buyers who may have moved away from the product due to its complexity of use. Many products are launched through partners by way of redistribution. For example, Adobe had a distribution agreement with Yahoo to distribute the latter's toolbar (YTB) with its ubiquitous Shockwave player, for a fee. In the year 2006, Adobe agreed to distribute Google's toolbar (GTB) with its Shockwave and other products that had large user bases, in place of YTB, for a fee. Around the same time, Yahoo joined hands with Microsoft to distribute the latter's Internet Explorer 7 browser, much before the latter launched IE7 for public download. The IE7 available from Yahoo had the YTB pre-installed in it. Google re-launched its GTB with Shockwave while Yahoo re-launched its YTB with IE7. Partnership is beneficial while re-launching, especially to conquer the green territory. For example, IE7 may be a new territory for all the browser toolbar vendors such as Google and Yahoo. Users who downloaded IE7 from Yahoo site have YTB pre-installed, and hence may not opt to install GTB, thereby Yahoo can capture a good market share.

Pre-Launch Activities

In addition to the product conceptualization and engineering tasks discussed earlier, there are many activities that need to be completed before the IT launch. These tasks may include viral marketing programs, where the select set of users promote proliferation of the product/service (primarily driven by network effect), beta usage to promote and assure quality, and blogs by employees, partners and beta testers. An important activity that is also financially beneficial to the vendor is launching the community developed product documentation, or service documentation on the website. It can be achieved by letting the beta testers to create documentation (to supplement the vendor's documentation), staging, and making it public at the time of launch. This is particularly helpful as the beta testers may document the tips and tricks, and may reduce the learning curve of new buyers. It is worth obtaining a few buyer testimonials prior to the launch as they may convey to the market the user-oriented engineering characteristic of the vendor and provide good publicity. Partners must be trained well to demonstrate the product or service, so as to highlight the strengths, and to underplay the weaknesses of the launched offering.

Since new products affect earnings, in public companies listed on the US stock exchanges the messaging on new product launches may need clearance from legal departments. Such activities include forward looking statements, registration of copyrights, getting export clearances from the government of home country, getting import clearances from the governments of target countries, filing for patents, feasibility of letting users pre-order the product or pre-subscribe to the new service and many others.

Post-launch Activities

Launching of a product or a service is not the final activity for any IT vendor. After the product is launched, the media, the hardware or the device needs to be manufactured, and the distribution or roll-out has to be implemented. Therefore, the marketing team needs to communicate clearly the dates of announcements, availability in stores, or shipment.

The sales department and the IT department of the vendor must be equipped to accept orders on the web and support the surge in order processing. In case of allowing pre-ordering, this activity precedes the launch. Typically, IT vendors offer discounts on these programs at the launch or pre-ordering (what is conventionally called the introductory offer). Since IT service consultants need vendor certification, training and certification programs must be organized. It may be a good idea to make the product usage training videos available on the vendor's website, or on public video sites like YouTube⁹ and MetaCafe.¹⁰ These unconventional but newly discovered tactics save money for the vendor and provide good marketing platforms. Vendors may need to create and host user discussion forums enabling registered buyers to share their thoughts on the products and services, if they are not already present. They should also be allowed to log bugs and track the status on resolution of the bugs.

Analysts can be allowed to review the products and services. Vendors can participate in product comparisons, typically conducted by magazines in that area, to prove the strength of the products over the competition. The vendor must also communicate to the user community and buyers its commitment to the product by announcing the product road map and an indicative schedule.

Notes

1. <http://www.yahoo.com>
2. <http://www.adobe.com>
3. <http://www.nokia.com>
4. <http://www.dvb-h.org>
5. <http://www.iptv-forum.org>
6. <http://www.sec.gov/divisions/corpfin/faqs/soxact2002.htm>
7. <http://www.apple.com>
8. <http://www.cingular.com>
9. <http://www.youtube.com>, owned by Google
10. <http://www.metacafe.com>

Questions

1. How was Firefox launched so successfully?
2. Is Thunderbird launch successful? Is it as successful as Firefox? What is the difference between the two?
3. Why has Linux still not conquered large marketshare despite multiple vendors, distributions and multiple version releases?
4. How do IT service vendors fare in the launch of their services?

ROLE OF TECHNICAL SUPPORT IN MARKETING OF INFORMATION TECHNOLOGY

To begin with, we will understand the necessity of technical support. Further, we will understand various types of technical support and compare them. We will examine in detail the impact of technical support on information technology sales. Further, we will study in detail various classes of technical support offered by vendors of information technology products and services. We will then examine the role of automation in technical support in its various forms. We also look at various parameters that companies use to evaluate the performance of their technical support persons. In the end we will study the IT support market.

Why “Technical Support”?

Have we ever noticed any technical support person playing a role prior to a sale in industries other than high technology? Most often, such a role is not conspicuous. The importance of technical support increases with the increase in the complexity of goods and services; high technology, especially IT epitomizes this. IT is credence good (or service); the buyer cannot easily decide what he/she needs to buy and even after the purchase, may be unsure whether the purchase decision was correct or otherwise.

For example, let us consider the purchase of a home computer. There may be various technology factors that can guide or confuse the buyers.

- Does the home PC play DVDs? The buyers may be unaware of the various formats of DVD. Or should it have Blu-ray drives?
- Can I connect my camcorder to my home PC to edit my home videos? The buyers may be unaware of the USB version compatibility. Camcorders need PCs to support USB 2.0 version; earlier versions may not work.
- Do I buy an optical mouse or an electro-mechanical mouse? (Thank god the electro-mechanical mouse is becoming obsolete).

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- Do I buy a CRT monitor or an LCD monitor? Many buyers may not be aware of the radiation effects of CRT monitors, and the viewing angle limitations of LCD monitors.
- Should I buy SATA hard disk or the EIDE hard disk? Serial ATA hard disks perform better than Enhanced Integrated Disk Environment hard disks. Buzzwords?

It becomes even more complex...

- What happens if main memory is shared as video memory? The video and system performance is better if the video and the CPU have separate memory resources. Or what the heck is CPU?
- How do I connect it with other computers at my home?
- Which operating system (OS) software should I use — Windows or Linux (or, more fundamentally, what is an OS)?
- Does my system not come with editing software? (Or, simply, how do I type a letter and print?). Should I buy MS Office or use OpenOffice that is available for free?

If a home user has so many questions, you can imagine the complexities that affect the corporate IT purchase decisions. Then, there are vexing pricing structures for corporate buyers, to add to the confusion. Interoperability of IT systems procured from a bunch of vendors is another nightmare altogether; also an expensive one. The question that probably needs to be answered for a corporate is simply, “What is the return on IT investment?” It is unfortunate that this question remains mostly unanswered for many buyers, due to incorrect purchase decisions.

Who will answer these questions? Obviously, it is the technical support staff of the vendor. *Prima facie*, there are two types of technical support roles — pre-sales and post-sales. The pre-sales staff will answer the buyer queries before the sale and provides a sense of comfort to the buyers. Typically, the pre-sales function provides

- demonstration of product, prototype
- demonstration of compatibility, integration
- clarification to queries
- support in preparation of proposals, bids

The role of pre-sales in IT marketing is discussed in a separate chapter. The post-sales technical support staff provides assurance to the buyers during the life of the product/service, or, as long as the support contract is valid, whichever of the two is shorter. Unlike pre-sales, the post-sales function provides

- installation and configuration of IT
- upgrade of IT
- export and import of user system configurations
- administrator training
- end-user training

In this chapter let us understand the role of post-sales technical support in the marketing of IT.

In the fast moving high technology world, technologies and concepts need to be demonstrated to buyers, especially the business users. Also, advanced users demand more out of the product or the service that they procure. Technical support persons are required to train the users on the usage of the complex IT products. It seems that some companies deliberately keep their products complex to raise the entry barrier for competitors. They may do so also to earn more revenues from the services offered around these products, and from training the users. Enterprise software (such as ERP, CRM, SCM) vendors—all belong to this not-so-exclusive group.

The opportunity cost associated with downtime (lack of availability of service) is very high for many organizations. This may necessitate the requirement of support on demand too. Hence, the vendor that offers most reliable support has a better probability of bagging a repeat order from the buyer.

For any IT product or service purchased by an organization, there can (and will) be many types of users. They can be ordinary users (called common users in IT parlance) and special users, such as managers, IT administrators, information security specialists, IT auditors, and others. The product/service vendor is probably the best entity to train all these types of users. The vendor who can bundle such trainings with the product/service has a better chance of winning the buyer than others that do not bundle.

Many corporate IT buyers set the availability of technical support in the country of procurement as the pre-condition to short-listing vendors. Availability of local technical support helps reduce the opportunity cost of downtime to the buyer. Any vendor that may not provide technical support locally stands to lose the deal. However, such requirements can be put forth only by big IT buyers; small IT buyers may still have to live with the remote support, irrespective of the opportunity cost they may incur.

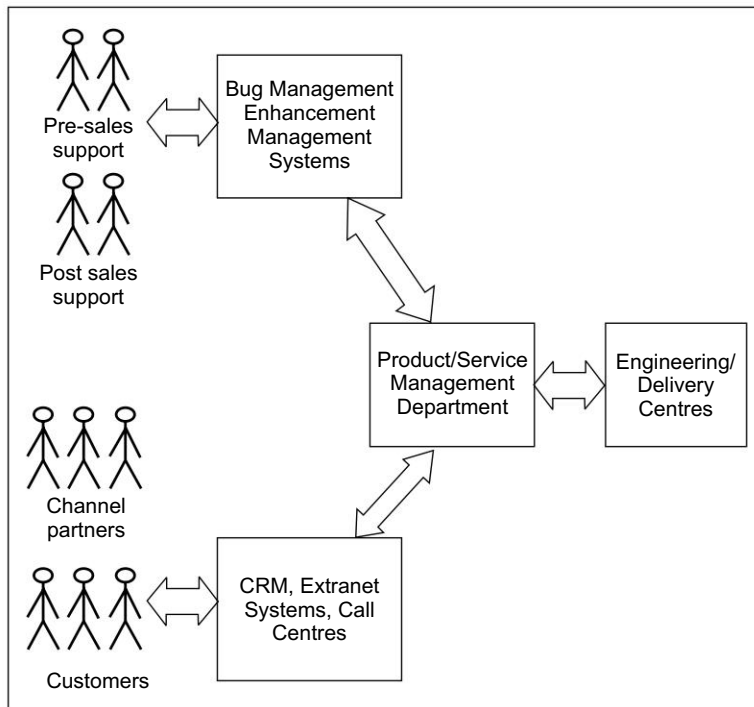
If a vendor of a product or service does not back them up with strong post-sales technical support, then even the channel partners may hesitate to sell such a product or service. Channel partners prefer selling products that are inherently stable, and may not like to be blamed by the buyer for any fault of the vendor.

Technical support is also very much required to retain buyers. Technical support function may provide regular income to the IT vendors. Vendors offer post-sales warranty to buyers, bundled with the product or the service. The vendor will then be obliged to provide technical support on the product or service during the period defined in the contract. Such contracts also include free upgrades and software updates released during that period. Technical support personnel will have to offer upgrade and update services either onsite or remotely, based on the service levels defined in the contract. Many buyers

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exclude those vendors that do not offer post-sales technical support. This becomes yet another reason for the necessity of technical support.

Post-sale warranty has another interesting dimension — that of profitability. More complex the product, higher is the warranty fee charged to the buyer. Thus, the warranty itself can be a good revenue stream for the company. Also, the additional cost of selling a warranty, along with the product, is negligible, thus ensuring good profitability.



It is true that many aspects of IT products or services go undocumented or under-documented. In many instances, the documentation provided with the product or service is unclear. Some companies also may not like to publish the documentation on known limitations and bugs simply because they can be easily accessed by competitors who may use them as silver bullets to fight the vendor. Usually, such documentation, if any, is made available only to technical support personnel and channel partners. It is the technical support that works on the buyer issues/problems/situations (either by simulating in the lab, or by accessing buyer applications remotely), and provides the appropriate solutions.

Sales persons sometimes make inappropriate commitments to the buyers. The buyers then demand the vendor to live up to these commitments. It becomes the responsibility of the technical support persons to realize these commitments for the buyers. This puts technical support function at undue risk and in uncomfortable situations. Such situations can arise if the rules of engagement

between the sales function and support function are not clearly defined in the vendor organization. Such situations can also lead to a blame-game between the two functions. Sales people, sometimes for lack of technical competence, tend to sell the product/service based on features, and the buyer too, for many reasons, accepts the features as benefits. After the sale, it is the work of the technical support department to enable users (or buyers) to derive the benefits.

Buyers tend to remember any vendor's lack of service and unresponsiveness for a long time (remember the opportunity costs they may have incurred due to the vendor?). Also, it is common for organizations to stagger their IT purchase over a few quarters, owing to budget allocation or any other reason. If the vendor does not provide good post sale technical support anytime, the buyer may be inclined towards holding or delaying the subsequent orders, or choose a different vendor. A bad technical support (apart from a bad product or service per se) can jeopardize the vendor's future sales.

Buyers may use a product in the IT system along with many other products. However, the quality department of the vendor may not be able to test the product with all those other products. The buyer often comes back to the vendor seeking technical support to resolve the problem of system integration. In such situations, the technical support teams work and provide innovative solutions to the buyer.

Types of Manual Technical Support

The following are the types of support provided by technical support persons:

- *Onsite*. In this type, the person is physically present at the buyer's premises and provides the service. Hardware support is predominantly onsite centric.
- *Remote*. In this type, the person troubleshoots or attends the buyer's service request from a remote location (the vendor's premises). Software support tends to be remote and so is the network operations support.
- *24 × 7, 8 × 5*. This type of technical support is time based — 24 × 7 support means the technical support is provided round-the-clock on all days of the week. Such support is for business critical applications user industries like telecommunications, health care, finance, logistics, defense and the like. 8 × 5 support means that the vendor provides technical support on working days of the week during working hours. Such support is for less than critical business applications.
- *Web, voice, remote management*. This type of technical support is based on the medium in which the remote support is provided. Technical support may be provided by support personnel either through e-mails, chat or voice. Alternatively, the support person may access the user's system remotely and troubleshoot.

- *Customer Self-Support (CSS)*. Also called buyer self service, this type of technical support is suitable for any user better than a novice, and can locate the necessary details on the web. A vendor organization may suggest to the buyers to register themselves on its CSS site (also called buyer extranet) providing the details of product purchase such as product serial number and date of purchase (for warranty period check). The vendor may then provide the buyer with a unique user name and password to access the CSS site. Vendors host all the details (and in some instances, software like a patch), and guide the users to download the required details (or the patch). The basic requirement for such an extranet is a very intuitively designed access-restricted website that is also complete in all technical aspects of the product range. This saves the vendor the cost of supporting the user manually¹. It is to be noted that many bugs in IT products may be known to the vendor before the buyers discover them. However, vendors are likely to postpone bugs of certain low criticality owing to product release expediency. The buyers that report such bugs are then directed to the self-service portals that are restricted to genuine buyers. The vendor may provide information on work-around for some bugs in the extranet site. This is a normal business practice because, publishing information on known bugs in print user guides and other documentation can prove to be competitive disadvantage. Your competitor can procure your documentation from the market and use the information on known bugs of your product to beat you in future deals.
- *User community websites*. Such sites are for collaboration and are usually hosted, maintained and moderated by vendors. These are websites where users of the products can register and share/receive knowledge from fellow users. Advanced users contribute their tips and tricks of using the vendor's products. Such sites are very useful when the products can be customized, and the vendor cannot predict the usage scenario in advance. Such sites may contribute to enormous buyer support cost savings, and also popularization of the product. The vendor moderates the activities on such a site to avoid getting any bad publicity from disgruntled buyers.

Types of Automated Technical Support

With the increased availability of network bandwidth and the proliferation of the Internet, automated technical support of software is spreading fast and wide. A few ways of automated technical support are explained below.

Automatic Bug Reporting

Microsoft uses this method extensively. Its OS Windows XP often generates error logs while running on user's computers. Whenever such an error is generated, a bug report is created. The user is asked whether this bug can be reported to Microsoft. The user is provided an option to view the bug log. If the user opts to report, then, subject to the availability of connectivity to the

Internet, the OS contacts a pre-defined system in Microsoft and presents the error log. Microsoft claims that such logs help it analyze the errors reported and provide the users the necessary bug fixes. However, such a bug reporting process may have a few shortcomings. Not all computers may be connected to the Internet at the time of the occurrence of the error. The users may be skeptical whether Microsoft (or any other vendor) is violating the user's privacy by accessing user's confidential data, irrespective of what is shown to the user as the message that is to be transmitted to the vendor. The size of the error log may congest the user's network and disturb other activities on it.

Automated Alerts

Systems are built to alert the administrators on various events such as impending capacity outage, inappropriate usage by users, attempts to hack, and any other that may need the administrator's attention. Typically, such alerts travel over the Local Area Network (LAN) or the telecom network and reach the administrators in the form of e-mails or text messages on mobile phones.

Automated Downloads and Updating

Companies also provide automated technical support by providing patches and upgrades down the network. The vendors build in functionality in such software to check the availability of latest upgrades and patches from their site; once found, the users are asked whether to download. If the user accepts, the upgrade/patch is downloaded and installed automatically. A few users may not like to accept the automated download of the patches and upgrades, especially if they are found to be defective. Some of the shortcomings seen in automated bug reporting are also seen here. Installation of such upgrades and patches may need restarting of the OS/application; if the user does not restart the OS/application for any reason, the vulnerability may be seen till the restart. Thus, the success of such automated updates/patches largely depends on not requiring a restart. One problem that IT departments face in organizations is that not all users update their systems simultaneously. This has two effects: the users may or may not load the upgrade software (causing headache to IT department for not being able to standardize software assets on the desktops, laptops and servers), or multiple individual users repeatedly downloading the software separately may choke the network bandwidth.

Automated technical support is a very seamless way of capturing defects from buyer systems, distributing software upgrades, fixes and preventing buyer vulnerabilities. This approach to automated technical support is bound to proliferate more, with the increase in Internet connectivity, despite its shortcomings. This is because of the simple reason that such automation may reduce the IT management cost².

From the IT vendor's perspective, automated bug alert helps improve the quality of the product as well as the cost of bug management (accruing into product engineering³). Automated support reduces the cost of buyer support

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and improves the user experience. Automated technical support definitely serves as a good selling point for the vendor, but is unlikely to be a differentiator, as more and more vendors are building this capability in their products. Examples of vendors that have taken the automation route are Microsoft (Windows, Windows Media Player) and Real Media (Real Player). Even open source communities are taking this route to provide software upgrades to the users. Firefox browser too checks its site www.mozilla.org for any available updates.

Levels of Technical Support and Escalation Management

Technical support commitments vary with the nature of the software. If the software is commercial, then the vendor may offer tiered support, corresponding to various Service Level Agreements (SLAs) that the vendor commits to the buyer.

Many IT products are sold through channel partners. There may be levels of service that may have specific time limits for response to the buyer, and for resolution of the buyer's issues. The lowest level of support may be named as Bronze support, and the highest as Platinum. Bronze level support may generally mean product carry-in warranty or e-mail response, say within 48 hours. Platinum support may mean response within a few minutes and resolution of the problem within a few (about 12) hours. Buyers pay the vendor the least for Bronze support and highest for Platinum support. Payment for support is to be made in advance to the vendor. Product vendors outsource the first level of support to the channel partner (usually locally available to the buyer), whereas the highest level of support may offered by the engineering team itself. Gold support (inferior to Platinum support), may offered by the professional services groups of the vendors.

In software service contracts, the vendors usually guarantee support for six months from the date of signing of the project with the buyer. Such support is usually onsite (in the buyer's premises of project deployment), and the cost for that may often be included in the Bill of Materials (BoM) that the buyer gets from the vendor before the beginning of the project.

If a buyer's issue cannot be resolved by the support team, then it is escalated to the next higher level. In product companies, such escalations may even be addressed by the CTOs or the CEOs. This is because the SLA is a contractual obligation of the vendor to serve the buyer for the agreed period with the agreed quality of service (QoS), failing which, the vendor has to pay a penalty. The penalty may be financial (monetary), or service credits (which involves extension of the support contract for free).

As it is said, buyers come to vendors based on the vendor's price, but stay with the vendor for quality of service. Technical support is an absolutely

necessary function for retaining buyers thereby reducing the cost of customer acquisition. While acquiring new buyers is like acquiring revenue, retaining of old buyers is like savings. Good quality technical support can thus save the vendor the cost of buyer retention.

In the open source world, technical support is provided voluntarily around the globe. The open source product development and bug fixing teams too has adopted the “follow the Sun” model where enthusiastic software developers around the world check in their software code. The open source forums may usually host message boards for the users to log bugs. Engineers that contribute the code may then provide bug fixes on relevant websites for the users to download. A moderator may usually monitor the bug fixes that may go into any open source product, for quality assurance. Many a times, the technical support offered on open source products is likely to be better than that provided to corresponding commercial products.

Pricing of Technical Support

There are various structures of pricing that are followed by vendors of technical support. Since post-sales support is essentially an IT service, the pricing structure is nearly the same as IT services pricing, but with minor variations. A few of these are explained below.

- *Incident-based pricing:* In this scheme of pricing, the buyer buys “incident packs” from the vendor. For example, if the buyer buys a 5-incident pack, then the buyer can request support five times. In any such request, the buyer can report any number of problems that he/she is facing with the product or service. That means if the buyer contacts the vendor once and reports 7 problems, the contact is still treated as one incident. It will be treated as one incident until all the 7 problems are solved, even if the resolution needs continued interaction between the vendor and the reporting buyer. These incident packs also have a validity period, usually six months or one year, beyond which all unused “incidents” may lapse.
- *Resolution time based pricing:* In this scheme, the pricing is inversely proportional to the resolution time that the vendor guarantees the buyer. So, organizations with high opportunity cost of lost business sign up with the vendor for shortest resolution time and include stringent penalty clauses in the SLA.
- *Location-specific pricing:* The pricing is based on the locations of product deployment or service delivery in the buyer organization. This is applied in deals that involve global purchase by the buyer and may usually include per-diem price of the vendor support engineer (allowance being specific to each country) and cost of travel from vendor’s location to buyer premises.
- *Personnel based pricing:* Pricing may vary based on whether the support is provided by the channel partner or by the vendor.

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- *Custom pricing:* These may be specific to the buyers for activities such as installation, configuration, re-installation and troubleshooting.

Evaluation of Technical Support Personnel

Pre-sales technical support personnel are evaluated based on on-time response (to the sales team and to prospective buyers), innovation in suggesting solutions to the buyers, prototyping skills, and order conversion rate⁴.

Post sales technical support personnel are evaluated based on parameters such as resolution time and others defined in the SLAs, innovation and repeat order for support contracts.

Technical Support and Public Relations

A key factor that may swing the buyer's decision in favor of one vendor over others is the widespread availability of post-sales technical support. It is cyclic — good market share can lead to greater product support demand, and high availability of product support skills can lead to increased sales. Vendors have modified their business models to promote the skills required to support their products in the market. The most common form of this promotion is the creation of training divisions in their organizations. These divisions offer training (through partners, online, and other channels) and conduct “Certification” examinations. The successful trainees may be “vendor certified”. These examinations can also range from beginner's level to expert's level. It is commonplace to find Sun Certified Java Professionals, Microsoft Certified Professionals, Cisco Certified Network Architects and other certified engineers. Some companies such as Motorola, Oracle and Wipro have gone a step ahead and established their own “universities” to further the requisite skills and to influence demand.

Opportunities Arising from Technical Support Function

Many companies offer incentives to their technical support personnel for up-selling and cross-selling. Consider this example. A buyer calls the support centre complaining that the system has stopped responding. The support person, upon analysis, finds that the system stopped responding due to demand beyond the specified (read purchased) capacity and quickly restores the system. Subsequently, in the same call, the support person offers to increase the system capacity (or provide additional licenses, probably to meet the growing demand in the buyer organization) and quotes the price for the same. If the buyer agrees, a sale can be made. The advantages to the vendor are multi-fold, such as buyer lock-in, near zero cost of selling, lower commission pay-out to the technical support person (usually, as compared to the sales person) and buyer's goodwill

earned for a great response. A few companies have the good practice of giving away prizes to technical support persons that sell most during a specific period, say, a month or a quarter. Such practices bring in good revenues to companies at lower-than-normal cost of selling, and also motivate the technical support persons.

Notes

1. Buyer self-service is being extended to many markets. An interesting article in this context is “You’re hired” published on 16 September 2004 in the Economist.
2. Refer the chapter “Total Cost of Technology Ownership” for more details on IT management cost.
3. “Halloween Documents” on the website www.opensource.org show what cost commercial software vendors incur for product engineering, and how the open source communities engineer the products faster.
4. Ratio of orders won to the total number of buyers provided with pre-sales support.

Questions

1. What is the importance of offering (or not offering) technical support on the free variants of IT products and services?
2. Should pre-release products such as alpha or beta be supported technically? If so, why?
3. What factors determine the decision of companies to offer technical support in specific languages, such as English, French, Spanish and Japanese? How does such a decision affect the vendor?
4. What factors determine the nature and level of support that vendors may need to provide buyers?
5. Is it appropriate to price the pre-sales buyer support service? What factors determine whether the buyer pays, or is given free technical support?

PART IV

GEOGRAPHICAL ASPECTS OF MARKETING OF INFORMATION TECHNOLOGY

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INFORMATION TECHNOLOGY IN INDIA — MARKET SCENARIO AND MARKETING

In this chapter we will study the characteristics of the Indian IT market and understand its current scenario. Further, we will examine the market segments for their strengths, weaknesses, opportunities and threats. We will learn about the channel partners and about the support issues specific to this country. We will examine the IT sales cycle, and finally take a look at various country entry strategies that vendors adopt to foray into the Indian market.

Characteristics of Indian IT Market

The Indian IT market has some unique characteristics. A few of these characteristics have global implications, though the Indian market has a small single digit share in the global multi-billion dollar IT market. Here, one will notice that the ratio of IT spending by organizations to their revenue is very low compared to that of the developed countries. Does this reflect on the lack of financial transparency in the Indian establishment? Not quite sure. Not different from many other countries. IT is not the mainstream revenue earner in Indian companies; it continues to be viewed as a cost center, or a support function. The existence of companies with old business practices, and the high proportion of old economy companies in the national economy partly contribute to the low IT spending. The cost sensitivity seems to be a congenital trait of Indian IT buyers.

A significant characteristic of the Indian market is the practice of low service levels across various sectors. This is due to the near absence of enforcement of service contract terms or the prolonged litigation process. Since the necessity to improve service quality has not been a priority, these low service levels do not require high IT investments. A consequence of this situation is the presence of many disillusioned buyers. The situation, however, is changing, due to competition.

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The penetration of IT into society in general, and businesses in particular is quite low in India. The demand in the Indian IT market is largely derived from the IT services buyers of the US, Europe and the Far East. The Indian market is primarily built on services that are offered to buyers abroad, in a phenomenon called ‘Offshoring’. Offshoring can be both ‘insourcing’ and ‘outsourcing’: insourcing means that the IT consumers abroad (typically from high cost regions like North America and western Europe) set up their captive IT centers in India and enjoy the benefits of lower cost; outsourcing means that these consumers procure IT services from IT vendors in India. Offshoring is observed both in IT and the IT-enabled services market in India. Since the Indian IT market is heavily export-centric, the revenue trends of the market correlate with global spend on IT. In a lighter side, insourcing and outsourcing have contributed to terms like “Bangalored” meaning jobs moved from the western countries to Bangalore¹.

IT products developed in India by companies of Indian origin, but launched globally, are very few in number. This is because most Indian companies lack the complementary assets like sales force and support, required for selling products globally. Yet, a few Indian companies are slowly and carefully launching their products globally, and are becoming successful in a few pockets of the IT market.

The sales force has always been a point of weakness for Indian IT services companies. The sales force mostly try to position their companies as cost leaders (especially while selling IT services to buyers abroad), thereby losing the opportunities to command premium pricing. The client concentration (too many Indian vendors focusing on few select buyers) is high, and this drives down the price of the services further. Also, Indian IT companies find it expensive to maintain extensive sales force in countries like the US and UK.

Hardware Market Scenario

The term hardware here includes the computers, networking devices, data storage systems, and peripherals. The hardware market in India plays a ‘kid brother’ role to the software market, both in size and in mind-share. Government policies on hardware have not been as friendly as those of software. Hardware sales have lower margins compared to those of software, similar to many markets in the west. Typically, post-sales service business is through periodic maintenance contracts; these contracts were the stronghold of domestic system integrators who have multi-pronged alliances with multinational product vendors like IBM, CISCO, Sun and others. The Domestic IT maintenance market (including hardware and software) has changed since, with global companies like IBM and Accenture jumping into the fray and snatching deals away from domestic vendors like Wipro, TCS and others.

The local market for computers and peripherals is highly fragmented. The retail market for small businesses and home use is largely unbranded, with retail

consumers refraining from paying premium for branded computers. The central government, of late, has introduced some import-friendly laws that aim to reduce the gray market size. Domestic hardware manufacturing is far less than imports. Companies in the government-promoted Electronic Hardware Technology Parks (EHTPs) or Export Processing Zones (EPZs) have minuscule presence in the world hardware market. Export is limited to a few specialized companies that do true cutting-edge research. Financial institutions, IT services providers, telecommunication service providers, pharmaceutical companies, IT-enabled services and export oriented units (EOUs) are big buyers of IT in India.

Software Market Scenario

Much has been written about the Indian software industry in the world media. The Indian software market imitates the manufacturing sector of many East Asian countries; the software developed in India is predominantly for buyers abroad, though a few local companies are turning IT savvy with time. Indian software exports, mostly in services, are just about three percent of the global IT market. Top managements of Indian companies have abundant skepticism about the real returns on IT investment. The domestic market is addressed mostly by second level IT service providers, since most top level providers focus their strengths on the more profitable markets abroad, sure of getting more bang for the buck.

India is a country where many things are available free, and many things are expected for free too. Also, the average Indian organizational buyer is very cost conscious. Hence, Open Source software is steadily gaining momentum. Governments, states and central, are turning away from proprietary and priced software to open source. The problem of weak law enforcement system is creating more opportunities for software piracy; many users do not even have any idea of intellectual property, let alone the rights.

In software, India is largely a development-driven export-oriented market. Hence, the domestic market for application development tools is larger than that of application deployment software platforms in number of units. For Indian IT services companies, billing their engineers (called consultants) to the buyers is of highest importance. However, such a billing depends on the buyer's skill-set requirements. Hence, these IT services companies try to influence their buyers' IT purchase decisions in a way favorable to their skill-set availability. Application platform vendor BEA understood this early on and started training a developer community on its tools far ahead of its competitors, and met with success in the application software market. BEA-trained engineers were available abundantly. Thus, Indian IT services companies started persuading their buyers to use BEA as application deployment platform, though BEA was not the global market leader in that platform then. This way, BEA gained a great visibility and good market share in India, despite the fact that vendors like

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IBM and Sun (iPlanet) probably had technically far superior deployment platforms, and a bigger market share worldwide. For BEA, the developers and IT service providers were growing the market. Eventually, other vendors understood the situation and took corrective action of acquiring the developer mind-share through training programs and certifications and, finally, overtook BEA.

Software product pricing in India is very interesting. A few vendors who recognized the Indian IT service provider's influence on purchase decisions of buyers, started offering differential pricing for software products purchased locally. As it is, software products are priced lower in India than in the markets around the globe; these products were priced even lower if the license was purchased in India on behalf of buyers abroad. Here is an example: say, an American company may intend to buy a software product for its use, and its list price is US\$3,000. The application development is outsourced to an Indian IT services company and the same software is priced lower in India with a list price of US\$2,000. If the Indian company buys the software license on behalf of the American company in India, then the software will be priced on par with, or lower than the Indian price that is in any case far less than the price in the US i.e., less than or equal to US\$2,000. The American company needs to authorize its supplier (the Indian IT service provider) to use the product during the course of the IT service. The only condition is that the Indian company will have to uninstall the software when the American company starts using it.

Devices Market Scenario

Empirically, hand-held devices represent more of lifestyle, and limited utility. The devices market in India includes hand-held computers, organizers, and feature-rich mobile phones². This market is very small compared to markets in developed countries. The mobile phone vendors in India have been more than aggressive in marketing feature-rich instruments, irrespective of the market's appetite for features. The market for hand-held computers is limited to elite buyers, and most of these users seem to purchase them for flaunting, and not so much for utility. These devices are perceived to be very expensive, and the prices have not reached the mass affordable levels. India, being one of the most competitive telecommunications markets, is all set to register high growth in mobile phones and feature-packed hand-held computers.

Services Market Scenario

Apart from the software development market discussed earlier, India has a well established IT services market to feed its booming IT exports. These services include maintenance of hardware and software, IT security consulting and audit, Internet service connectivity, web hosting, engineering design services for manufacturers abroad, and a variety of others. The biggest is the IT-enabled

services (ITES) segment that includes call centers and Business Process Outsourcing organizations (BPOs). These services have promoted the growth of domestic consumption of hardware and software in a big way.

The practice of sharing infrastructure for hosting web sites and e-mail servers is growing in India because of the low entry costs for users. Outsourcing of IT application hosting is used generally by old economy companies, or by those that are not IT savvy. The market for hosting services for corporate users is concentrated, whereas, for Small and Medium Enterprises (SMEs), it is fragmented. Large companies like Google and Yahoo are concentrating on this segment offering retail website hosting at very competitive prices. Shared services for electronic transactions using Electronic Data Interchange (EDI) have been in vogue for a long time, with domestic players dominating the Value Added Network (VAN) market.

In the early 1980s and the following decade, many product innovators entered India with sales alliances with local IT vendors. Although channel sales were a safe route to take, these vendors suffered quite a lot because of the local channels. Enterprise software or hardware is not a commodity that can be sold like a box; it needs a lot of buyer education on the benefits and value proposition of these products. This is a job typically handled by pre-sales department, though pre-sales plays a larger role in software than in hardware. The channels did not have enough skills to convey to the market the true value of their software products and sold them at prices far below their true value. Now, it is a common sight to see product innovators having their own marketing offices in India to prevent dilution of the value of their products, though their sales may still be handled by the channels. While pre-sales continues to be a contention in many cases, post-sales support is a serious problem. For a vendor, weak pre-sales may cause a loss of buyers, while weak post-sales support can cause a loss of buyers, with an added damage of bad publicity. Post-sales support continues to be weak in India, especially because of weak contract enforcement and limited legal recourse. Hence, it is common to see that product vendors have begun offering second level or better technical support directly to buyers in India.

Strengths of Indian IT Market

The Indian IT market is nearly three decades old. Consumers like home users, small enterprises, large Indian companies, foreign companies with Indian operations, ITES companies (both Indian, and captive operations of foreign companies), and software training institutes and government constitute a big share of the market. The PC market is fragmented, with small vendors having a strong hold on the home consumers, while the established global and domestic brands dominate the corporate buyers.

The offshoring of IT and ITES by foreign companies is likely to drive up local IT consumption in the years to come and vendors may record high growth

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rates. Knowledge of English has definitely proved to be a great advantage in ITES. Domestic IT consumption is expected to grow multi-fold when the Indian ITES sector will diversify along various parameters, such as:

1. providing services in European languages apart from English.
2. providing services in newer business areas.
3. providing services for buyers in more countries.

Tax friendly government policies have been pushing up software exports since early 1990s. However, the policies towards the hardware industry have not been as attractive to businesses. There are lobbying IT bodies – the National Association of Software and Services Companies (NASSCOM, www.nasscom.org.in), and the Manufacturers' Association of Information Technology (MAIT, www.mait.com) that work for the collective benefit of the Indian software services and hardware companies respectively. From an insignificant entity, the Indian IT industry has grown to become a significant contributor to the country's Gross Domestic Product (GDP) in about two decades.

Weaknesses of Indian IT Market

The mindset of Indian users of software definitely has to change for the better especially on IPRs. Also, many industries in the non-IT sector are excessively skeptical about the returns on IT investments. Availability of cheap labour in India undermines the competitive advantage that IT can bring about.

Bureaucracy is rampant, and friendly legislations take years to come. IT companies have not been very successful in influencing legislation. On the buyer front, Indian software service providers have very high client concentration, i.e., too many Indian companies do business with many buyers common to one another. This situation results in understating efforts, undercutting prices, missed schedules, effort overrun and erosion of value. It appears that the Indian IT vendors have recognized this problem and are making conscious efforts to get new buyers, thereby avoiding competition from other Indian vendors. It has been a trend since the year 2000 for companies to state in their quarterly reports the number of new buyers they have acquired. Of late, a few IT companies have also begun taking the domestic market seriously.

Product development has been an unfulfilled dream of many Indian IT vendors. World class software and hardware products from India are almost non-existent. Products can bring great value to innovators as the innovation costs will be one time and the revenues will be recurring. The argument for not innovating products is that costs of marketing the products abroad and supporting the buyers on a continuous basis can be expensive. Indian IT vendors face many barriers in products other than resources: pre-sales support is not yet mature, and global post-sales support is a non-starter as vendors may not be committed, or do not have clear multi-generation product roadmap. It is very common for companies to conceptualize a product in the West and develop it in India— either through a contractor or in their insourcing centres.

The Indian IT industry is facing a soft-skills issue while addressing markets abroad. Poor skills in language, communication, culture, political orientation, gender sensitivity and other factors create frequent problems for IT vendors. Also, the body shopping attitude of sales persons for quick gains underrates the overall capability of the Indian IT industry.

Indian IT industry till date has a high dependence on the US market. The US\$ to INR exchange rate has continuously slid, with the US\$ depreciating over twenty five percent against the INR since the year 2003. This has affected the profitability of IT exporters from India. Indian IT exporters are making concerted efforts to diversify to markets such as Western Europe and other countries, to arrest reduction in profits. This strategy seems to be showing promising results.

Opportunities in Indian IT Market

Governments at the centre, and the states have realized the potential benefits that can accrue to them with the growth of the IT industry. Consequently, the states are vying with one-another in projecting themselves as the most investment-friendly destinations for IT and ITES. Sops are being provided by these governments to woo both domestic and foreign companies to set up operations in their states. These sops may be in the form of tax subsidies, free or low cost land, and others. Over the years government has become a big IT buyer. The government promoted hardware and software export promotion parks are bound to increase in number. Office spaces are growing in size, thanks to the private players in the real estate market. As a consequence of increase in demand for real estate, prices are going up, forcing IT companies to reduce space per person. Taking this opportunity, many companies are letting their employees work from their residences via the broadband connectivity.

With growth at a healthy pace, the Indian IT industry can look at creating products and investing the profits from IT services business into product innovation. Low-cost hardware is a key requirement for the domestic market to spread IT to the masses. Since a majority of Indian masses is either uneducated or illiterate, there is a huge need for innovative products that overcome the education barrier. Localization may be difficult as the size of local language markets may not be profitable for vendors to localize their IT offerings.

The key to success in the software services industry is upgrading of skills. Open source skills will grow in demand as more and more governments across the world embrace open source products. With the growth in the IT industry, growth in the training sector is imminent. This will further increase domestic IT consumption. Also, Indian IT training companies have ventured into markets like China and other countries. There are many individuals and companies that offer training in soft skills, and this market too will grow with the growing IT industry.

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Instead of looking at weakening US Dollar as a serious problem, Indian IT vendors can look at it as an opportunity to expand their exports to other markets. This will help the industry in the long run and avoid being tied to the health of US economy.

Threats to Indian IT Market

The IT market in India is facing threats — internal and external. There are short term threats and long term threats too. We will understand them in greater detail here.

Geography risk: As discussed earlier, the domestic IT consumption in India is largely derived from the IT exports. USA is the biggest buyer of Indian IT services till date (despite the depreciation of Dollar), followed by Western Europe, Japan and Asia-Pacific. Since the world economy is heavily dependent on the US economy, the demand from other geographies too is influenced by the USA. Any export demand reduction will also reduce the IT consumption in India. This over-dependence IT on exports, and largely on US buyers, is a risk that the Indian IT industry faces.

Currency risk: Indian IT service exporters find things in their favor as long as the Rupee (INR) depreciates against the US Dollar (USD). Fluctuations in the exchange rate can affect the profitability of these exporters even when the INR gains slightly against the USD. Of late, some of these exporters are hedging their exchange risk by the way of futures, and by carefully structuring the payment terms in export contracts.

Duplicable model: The Indian IT export model can be easily replicated. All that any entrant needs to do is to set up an IT operation in India for delivering services through their 'offshore centers'. With government's emphasis on promoting IT, job creation, tax shelters and welcoming of Foreign Direct Investment (FDI), there are few entry barriers. When foreign companies set up their offshore centers, these companies too can offer their IT services at low price, thereby diminishing the price advantage of Indian exporters. The other side of the story is that countries like China, Philippines, Malaysia, Thailand and South Africa are all picking up in IT services. Many of them are already perceived as FDI-friendly destinations by big corporations. The same will be the case with ITES. The threat to Indian IT exporters is the disappearance of cost as a differentiator.

Government policies: The Indian government has a great role to play in the IT industry. The tax regimes here are not very stable. The tax benefits that all IT exporters, foreign or Indian, enjoy may not last long, as governments here are in favour of taxing profitable industries heavily and may decide to make up for any budget shortfall by taxing IT earnings. Uncertainty of tax regimes reduces predictability of earnings, and may not attract FDI. Increase in taxation also reduces the return on investment, further decreasing the inflow of FDI.

Protectionism: Protectionism in jobs is a threat that the Indian IT industry is increasingly facing. There are labor unions and lobbies in the USA, UK and other countries that are strongly protesting against what they are calling, ‘export of jobs’ and “IT getting Bangalored”. Governments in these countries too may adopt protectionist policies for populist reasons, and restrict Indian IT exports through tariff and non-tariff trade barriers. The non-tariff barriers include denial of visa, work permits and the like. Though this protectionism is for real, the hyper capitalist emphasis on share holder earnings and demise of the trade unions will eliminate protectionism in a few years. The General Agreement on Trade in Services (GATS) too is aimed at reducing labor protectionism and to encourage free movement of skilled persons.

Marketing costs: Marketing is mostly an onsite activity for Indian IT vendors, meaning that the marketer has to be present, or represented in the buyer’s country. Although the cost of IT services is largely in INR, the marketing expenses for getting business are in stronger currencies, such as the USD and Euro. As of now, not many Indian IT brands are global, and of the few global ones, the recall is very low. Low brand recall increases the cost of marketing further. Indian IT exporters face a two-fold challenge: building strong brands and investing in marketing efforts.

IT Marketing Cycle

In the Indian market, cold calling the buyers (unsolicited meeting prospective buyers) is not a very difficult exercise, unless the buyer is a government official. The typical procurement procedure in the private sector is by Request for Information (RFI), and by Request for Proposal (RFP). The responses will be evaluated by committees that may include persons from purchase, technical, project, end-user, management, and other teams. In subsidiaries, the parent IT purchase policies may be in vogue. Government departments procure IT by the process of tenders. This is explained in the appendix at the end of this chapter.

Collaborators

The Indian IT market has collaborators, like in any other country. PR companies, lobbyists, channel partners, IT trainers, and advertisers form parts of the collaborators’ community. These collaborators help IT vendors in activities such as:

1. Account sharing/account introduction
2. Co-presentations/proposals
3. Joint demonstrations
4. Co-marketing
5. Product support

Some tender documents clearly specify the need for a local presence for buyer support, and collaborators are required in such deals. It is also rumored

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that these collaborators come in handy in unclean deals that may involve kickbacks, but such rumors are difficult to establish³.

Co-opetition (simultaneously cooperating and competing) as Ray Noorda of Novell put it, is prevalent in the Indian IT market too. For example, Infosys Technologies Limited (NASDAQ: INFY) may compete with Wipro Limited (NYSE: WIT) in the global IT services market, but also may buy IT from the latter's distribution arm. They may also supply solutions jointly to common buyers.

Country Entry Modes

There are various modes that IT vendors have taken to enter the Indian market:

Hardware: Hardware vendors have sourced components from Indian vendors, as well as set up their own manufacturing facilities. This is particularly true in the telecommunications space, with many vendors having set up facilities to manufacture handsets.

Software: In India, software vendors have entered the market first through a single distributor, and then by establishing reseller relationships with multiple distributors. A few vendors have outsourced their product development to Indian software service providers, while others have established their insourcing centers (subsidiaries). A few product vendors have outsourced their product support services to Indian vendors while retaining product development in their insourcing centers. Licensing of IP to Indian vendors is uncommon since Indian vendors are almost non-existent in the product markets.

Services: Many IT companies in India, both Indian and foreign, offer services such as remote management, remote application maintenance, running of network operations centers and the like. They also run the help desk operations for their global buyers in India.

As a rule of thumb, two factors inhibit FDI the most: government policies, and lack of political transparency. If the destination-country suffers from political opacity, or if the government policies hold foreign companies from entering the country directly, then, these companies are likely to enter the country indirectly, through contracts (for supply of goods and services) with a local vendor, or create a joint venture with a local vendor. In politically opaque states, such local partners are likely to be owned by the ruling entities themselves. As the political opacity decreases in any country, either through conscious governmental reforms or by political revolutions (or any other reason), the foreign companies develop more confidence to invest directly in that country, in the form of subsidiaries (insourcing). A few such subsidiaries later grow big and may eventually list on the local stock exchanges too. This has been the case with India. As the successive Indian governments understood the value of FDI, various sectors got opened up in part or full for foreign equity participation.

Appendix

A Note on the Tender Process in India

Government buyers compulsorily have to publish tender advertisements in newspapers (usually three state level or national level newspapers). A few of these tenders requires every vendor participating in the process to pay a refundable / non-refundable Earnest Money Deposit (EMD) to the buyer (government department). This EMD will help in dissuading vendors who are not serious participants in the tender process. After depositing the EMD, vendors get the tender document that specifies the buyer's requirement. The vendors present their bids to the buyer on or before the specified bid date. Pre-bid vendor discussions common to all vendors, for technical and commercial clarifications may be held, usually at the buyer's premises. The bids will typically be in two parts: technical and commercial, and may be submitted on different days. Submission of bids (both technical and commercial) can be either in print or online (called e-tenders). The bids will be opened in public and the low cost bids will be short-listed. The lowest cost vendor will be designated as L1, the next L2 and so on. The steps are listed below.

1. Tenders (technical, commercial, L1...)
2. Presentations/proposals
3. Demonstrations (if required)
4. Evaluation
5. Price negotiations
6. Placing of order
7. Delivery of goods and services

Tenders can be classified in two ways. In the first classification, tenders can be limited or open. Limited tenders are those in which vendors have to enlist themselves with the buyers after meeting the eligibility criteria (set by the buyer); the tender document will be released only to this set of vendors; open tenders are those that any vendor can bid in; such a tender will compulsorily require public tender announcement in newspapers. In the second clarification, tenders can be complete or in part; complete tenders require that the vendor bid to supply all the goods and services specified in the tender document; part tender will allow vendors to selectively bid for any of the items specified in the tender document. The Central Vigilance Commission has specified guidelines on tender process to make the process transparent.

Notes

1. Being a Bangalorean, I have often wondered what has made the erstwhile pensioner's paradise, Bangalore, the happening IT capital of India. I have found a few factors, that are no different from those that made the Silicon Valley in the US. Bangalore was among the first cities to get electricity supply in India. This also probably led to the establishment of the Tata

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Institute by the Tatas (later renamed Indian Institute of Science). In addition was the emphasis on education placed made by the rulers of Mysore state, and then the governments of Karnataka. The wave of technology in Bangalore started with the establishment of government-owned enterprises like defense laboratories, Bharat Electronics Limited, Hindustan Aeronautics Limited, and others. The real private sector global technology wave started with the early birds like Texas Instruments, Motorola and others setting up their insourcing centres in Bangalore in the late 80s / early 90s. Natural factors like the climatic conditions and social factors like the hospitable people with “you speak any language, we can help” attitude have contributed to the growth of business in general and IT in particular.

2. On an interesting side note, refer the article: Digital Age Creating PDA Addicts, http://abcnews.go.com/GMA/Technology_story?id=597810&page=1
3. To understand how transparent any country’s business environment is, visit www.transparency.org

Questions

1. What are the tactics/strategy that vendors can use to market their wares to the software developer-oriented Indian market?
2. How can piracy be combated in countries (like India) that do not have strict law enforcement?
3. What precautions should IT vendors take while selling to buyers who do not pay on time?
4. What are the advantages and disadvantages to vendors, if they price their IT wares lower in India than in many other countries?
5. What factors have contributed towards making India a strong IT service supplier and a weak IT product creator?

GLOSSARY

A

Automated Support: Mechanism to automatically report bugs to the vendors and automatically fix those bugs.

B

Bandwidth: It is the capacity of the computer network (and in some cases, peripheral devices), usually point to point. This largely determines the speed of communication.

Browser: Software such as Firefox or Internet Explorer that is used to request information published on other computers.

Bugs: Defects in information technology products

C

Computers: Electronic machines designed for scientific, business and home use.

Central Processing Unit (CPU): Hardware including processor, primary storage and memory.

Customization: Modifying or allowing modification of generic information technology to meet user-specific requirements.

D

Database: Software that stores data in a structured way on a computer.

Deployment: Rolling out IT service for use in production / real-life usage in an organization.

Decommissioning: Removing an IT service / system from real-life usage in an organization.

E

Enterprise Software: Software that is commonly used in corporate IT environment. For example, Mail servers, ERP, SCM, CRM

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F

FOSS: Software that is free to use and free to distribute.

G

Global Positioning System (GPS): A system used to electronically determine the position of a specific GPS-enabled object, for example, a car.

H

Hardware: The electronic components of a computer.

Hosting: Deploying computer systems for shared use.

I

Integrated Services Dialup Network (ISDN): A mechanism of providing voice, data and multi-media communication on telephone network (PSTN).

Intellectual Property (IP): An asset that is owned by anyone and licensed to someone else for use. The asset can be in the form of designs, copyrights, art work, multi-media, scientific algorithms and the like. The creator and the owner of IP can be different entities.

Internet: A super network of computers (network of networks) that spans across countries and organizations. It is loosely-coupled and decentralized in management.

Internet Protocol (TCP/IP): A format of communication amongst computers and peripheral devices on a network.

Interoperability: The ability of computers and / or software to work with one another.

J

Java: Software programming language developed by Sun Microsystems.

L

Legalization: The process in which a vendor collects a payment from any unauthorized user of an intellectual property (owned by the vendor), providing the right to continued use.

Local Area Networks: Network of computers and peripherals within an organization or a home.

Localization: Enabling information technology to be used in non-English speaking countries.

Log: An electronic record of an electronic transaction, stored on a computer.

M

Microprocessor (or simply, Processor): The brain of the computer that does most of the mathematical and logical operations.

N

Network: A web-like connection of computers with a common (often TCP/IP) format of communication.

O

Offshoring: Sending work outside of home country to other countries where the work can be completed at low cost.

Open Source: Source code that is available in public domain.

Operating System: Software that enables a computer for basic functionality.

P

Peripherals: Devices that are connected to computers for specific purpose. For example, Mouse, Keyboard, External storage, Scanner, Printer.

Pre-sales (also called Technical Marketing): Collective set of activities to be performed for a successful sale of IT.

Public Services Telephone Network (PSTN): Network that connects telephones around the world.

Q

Quality of Service (QoS): Quality level assured to the buyer by the vendor (commonly used in Network communication quality context).

R

Reseller: A vendor who buys the product from creators (called Original Equipment Manufacturers) and sells to users.

S

Server: Typically a high capacity computer or software resident on a high capacity computer that serves many users.

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Software/Program: The electronic code that makes the computers to do specific tasks.

Source Code: Computer instructions readable by humans; will be converted to software upon computer compilation.

Spyware/Malware: Undesired software that tries to steal information from computers that it reaches / resides on.

T

Tender: A process adopted by various governments of India for IT procurement.

U

Universal Serial Bus (USB): A technology that is frequently used to connect computers with peripherals.

V

Virus: Undesired software that has destructive effects on the computers that it reaches/resides on.

Voice over Internet Protocol (VoIP): The format of communicating voice (encoded) on computer networks.

W

Web Server: Software that serves static and dynamic information when requested by a Browser.

Windows: An OS developed by Microsoft Corporation

Author's Profile

K Venkatesh has worked in Information Technology (IT) industry for 14 years. During these years, he has gained invaluable experience in various functions of IT industry from international marketing to product engineering.



In Adobe Systems Incorporated, where he currently works and earlier in Aventail, Venkatesh has managed multi-million dollar products. His experience in designing and launching products also for the non-English world strengthened his idea that IT usage needs to be independent of English language skills. He is working on new business initiatives in the area of online entertainment.

Venkatesh enabled his business division to achieve multi-million dollar revenues and launched many products in India, while heading the Technical Marketing function for software products business at Wipro Limited. He successfully marketed the services of E-Commerce division to large corporate customers in US and Europe. He worked in the Productivity Office where he co-developed pricing model for large IT offshoring bids.

At the Centre for Development of Advanced Computing (C-DAC), Pune, India, Venkatesh generated large revenues by marketing IT solutions to customers in Defence, Education and Research market segments.

Venkatesh has been teaching “Marketing of Information Technology” course at the Indian Institute of Management Bangalore, since 2003. He has been delivering lectures on Open Source, IT Offshoring & Outsourcing, Launching of Products and E-commerce Business Models. He has also taught at The University of Michigan Law School, Indian Institute of Science, Bangalore and Padre Conceicao College of Engineering, Goa.

Venkatesh has a Management Degree in Software Enterprise Management (PGSEM) from the Indian Institute of Management Bangalore, an Engineering Degree (BE) in Electronics from Bangalore University. He has a Certificate in French from the Alliance Francaise de Bangalore. He has won many Merit and Career Awards.