

STATE OF THE SOFTWARE INDUSTRY 2007





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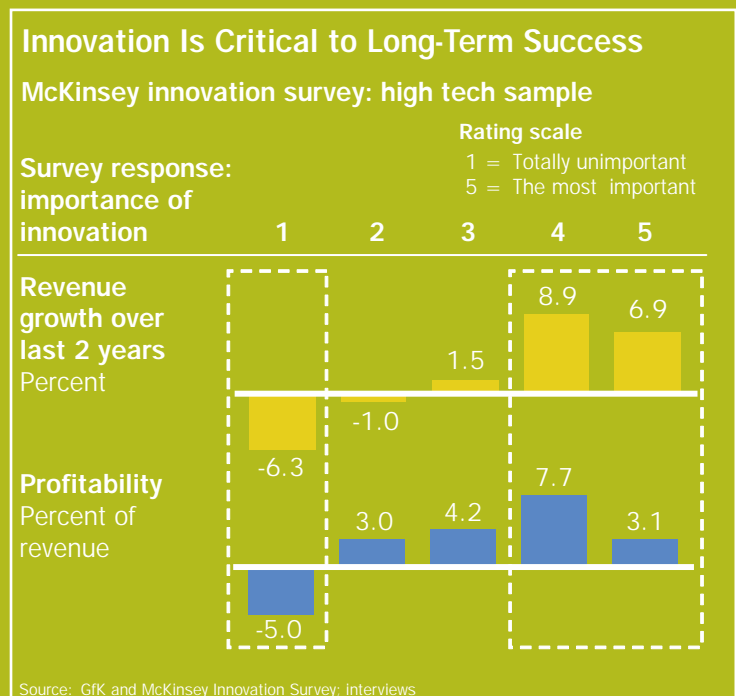
- Software companies will need to make business models and processes that match this diffusion pattern equally important to product and services innovation to be successful.
  - In a survey of software customers the vast majority are looking for business models other than the traditional license and maintenance model: 80 percent plan some spending in subscription or on-demand models, 60 percent plan to spend in a transaction-based model, and 33 percent plan software purchases funded at least in part by advertising.
  - Models to engage the end user across all elements of the business system processes have rapidly taken hold: “netnography” is a powerful new inbound marketing tool, “mass innovation” approaches are drawing users into the innovation and development process, “participatory media marketing” has turned outbound marketing into a two-way conversation, “end-user focused sales” is required to capture the imagination of the increasingly powerful end user, and “virtual support desks” driven by end-user communities are improving quality, driving down support costs.

As with previous waves of innovation, this one creates both opportunities and threats for incumbent players, as smaller companies have the potential to innovate in ways that attack existing business models. However, since this wave is being driven bottom up, paradoxically the best response for incumbent players may be to release control and let innovation naturally take its course.

## Innovation Accelerating as a Top Priority

Innovation is a top priority and an essential source of value creation for software companies. In a survey of software customers on areas for software industry improvement, respondents ranked innovation and new product areas as the most important (30 percent), followed by ease of use (24 percent) and customer service (23 percent). This focus on innovation replaces the focus on lower cost (14 percent) that had been so important through the downturn. These attitudes toward innovation are also strongly correlated with revenue and margin performance – in a recent McKinsey survey on innovation, high tech respondents who ranked innovation as “very important” or “the most important” showed significantly higher revenue growth and profitability than those who ranked innovation as less important, as shown in Exhibit 1. The combination of these internal and external trends indicates that the software industry must keep innovation a top priority in 2007 and the years to come.

EXHIBIT 1



Further, by following the money, it is clear that there is an acceleration in the investment and funding for software innovation across all sources.

### Internal Funding (Industry Health and Customer Budgets)

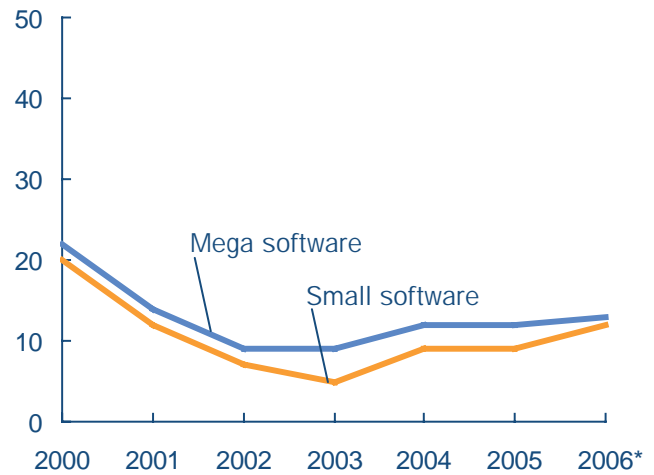
The software industry is continuing its healthy expansion with projected revenue growth in the approximately 9 to 13 percent range across all vendor sizes as shown in Exhibit 2a. Margins are equally healthy, with mega-vendors with revenues of greater than \$10 billion continuing to average 35 to 40 percent EBITA margins and the remainder of software companies averaging comfortable 12 to 18 percent EBITA margins as shown in Exhibit 2b. As a result, the majority of software companies have healthy balance sheets with little-to-zero debt levels.

Additionally, the software share of the customers' IT budget will continue to increase. Exhibit 3 shows that the software customers we surveyed indicated that more than 31 percent of their IT budget would go towards software this year, and they plan for an additional 5 percent of the budget to shift towards software over the next 2 years. When asked where they would spend this money, respondents indicated 31 percent would go to "new initiatives," providing funding for either internal innovation or to try innovative new products and services the software ecosystem is offering.

EXHIBIT 2a

### Software Industry Revenue Growth

3-year rolling average; percent

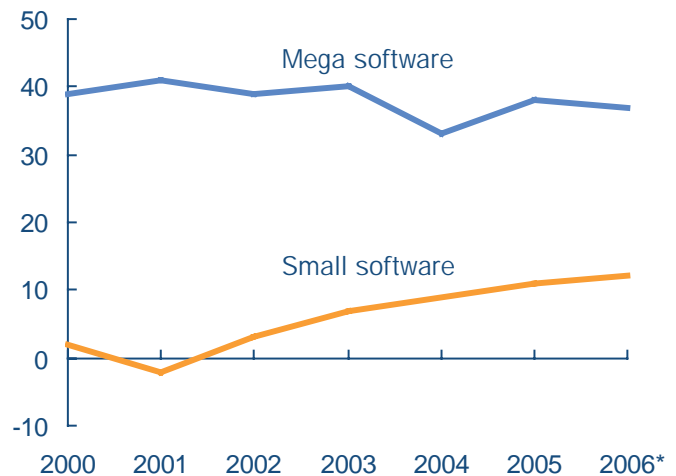


\* Includes subset of companies for which financial data is already available  
 Note: Revenue indices are adjusted for entry and exit  
 Source: Corporate Performance Analysis Tool; McKinsey Corporate Performance Center analysis

EXHIBIT 2b

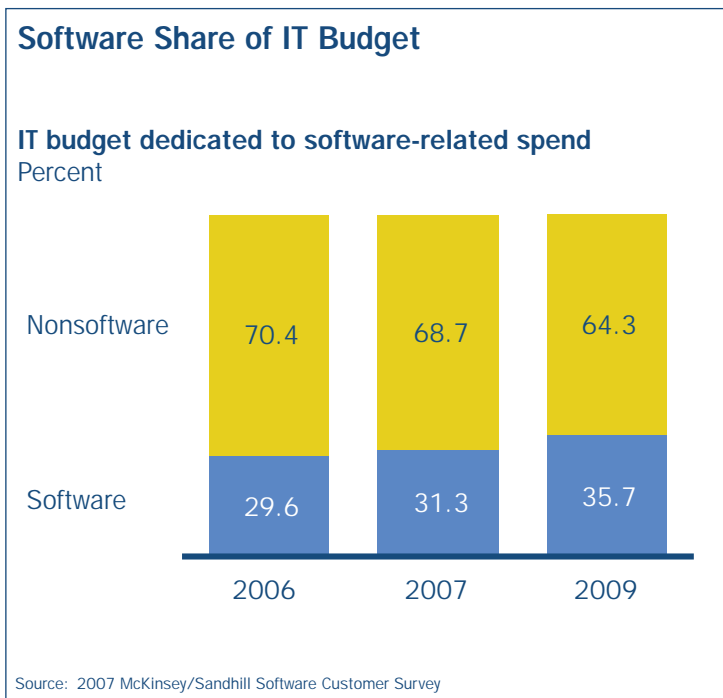
### Software Industry EBITA Margins

Aggregate; percent



\* Includes subset of companies for which financial data is already available  
 Note: Revenue indices are adjusted for entry and exit  
 Source: Corporate Performance Analysis Tool; McKinsey Corporate Performance Center analysis

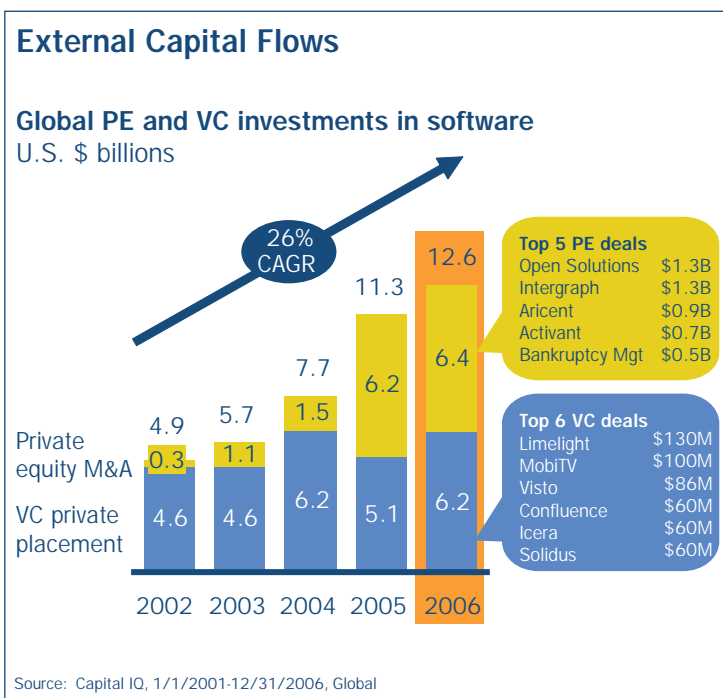
EXHIBIT 3



## External Funding (PE and VC Investments)

Total dollars from the PE buyout sector overtook VC investment in software for the second year running. As shown in Exhibit 4, buyout firms closed on \$6.4 billion worth of investments in 2006, more than a 20-time increase from the \$283 million of PE investment in 2002. Application and systems software accounted for virtually all of the deal volume. Software companies are attractive to buyout firms because of their conservative capital structures: a high degree of recurring revenues, consistent free cash flows, reasonable capital expenditure profiles, and healthy EBITDA margins. As software companies transition from being growth companies to mature ones, buyout investors see attractive takeout valuations.

EXHIBIT 4



Software companies that are taken private by buyout firms typically get restructured over a period of 3 to 5 years with substantial productivity improvements across the business system. This process can drive substantial operational innovation in areas such as product development, pricing, and customer support. Thus, even private equity restructuring can be a driver of innovation.

VC investment has also remained strong with \$6.2 billion of capital deployed in 2006 compared to \$5.1 billion in 2005. The growth was primarily driven by deals in the internet software subsector, which more than doubled to \$1 billion in 2006. As expected, the application software category continued to receive the lion's share (50 percent) of VC funding. Equally interesting is the home entertainment software

segment that reached an all time high in 2006 with \$237 million of investment. This reflects the interest in the digital home marketplace.



Another notable trend as of late has been the reemergence of corporate venture capital (CVC), which is defined as operating corporations investing directly in portfolio companies, either on a solo basis or alongside traditional, independent venture capital funds. According to the *MoneyTree Report* by PricewaterhouseCoopers and the National Venture Capital Association, in the 2nd quarter of 2006 CVC investment reached its highest level in terms of share of overall VC deals completed since the first quarter of 2002 – roughly 22 percent of all U.S. VC deals completed in the 2nd quarter of 2006 were by CVC groups.

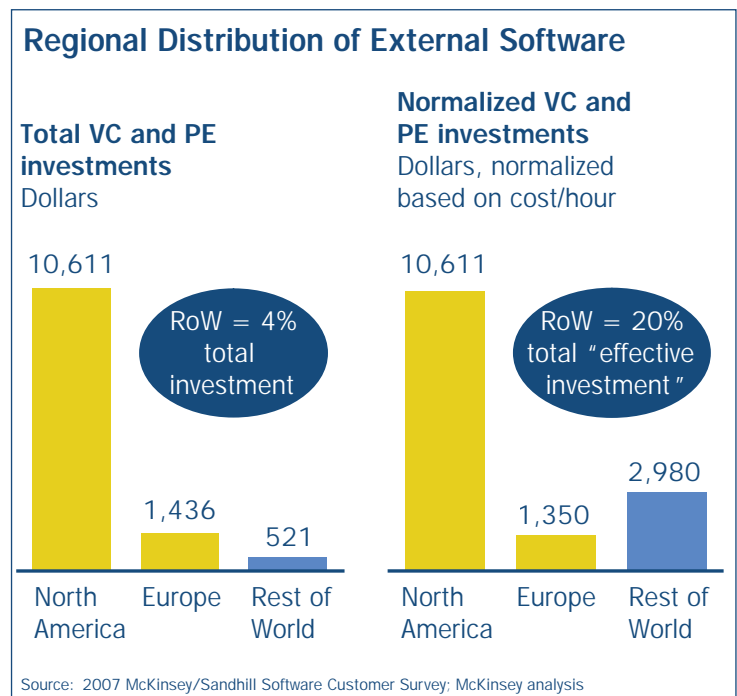
This uptick in CVC activity suggest that large companies are now in a position to look to the future and take some risks as it relates to new technologies. The sectors receiving the highest percentage of CVC dollars in the first half of 2006 were telecommunications, biotech, and software at roughly 15 percent each. However, when it came to sectors with the highest percentage of completed deals, software had 23 percent followed by biotech (14 percent) and medical devices (11 percent).

## Regions of Investment

2006 was a strong year for all regions, as every geography grew rapidly. North America remains the dominant market for external investment with a total of \$10.6 billion in combined VC and PE/buyout investments, accounting for 81 percent of the total value of all VC investments and 88 percent of the total value of all PE/buyout investments. Europe takes the majority of the remaining value, totaling \$1.4 billion and accounting for 13 percent of VC and 10 percent of PE/buyout investments. Despite the dominance of North America and Europe in total dollar share, however, regions from the rest of the world continue to contribute in meaningful ways. As shown in Exhibit 5, when investments are normalized by an average cost/hour (as a proxy for effectiveness), the Rest of the World jumps from 4 percent of total investment to 20 percent of “effective investment.” Examples of hot spots include:

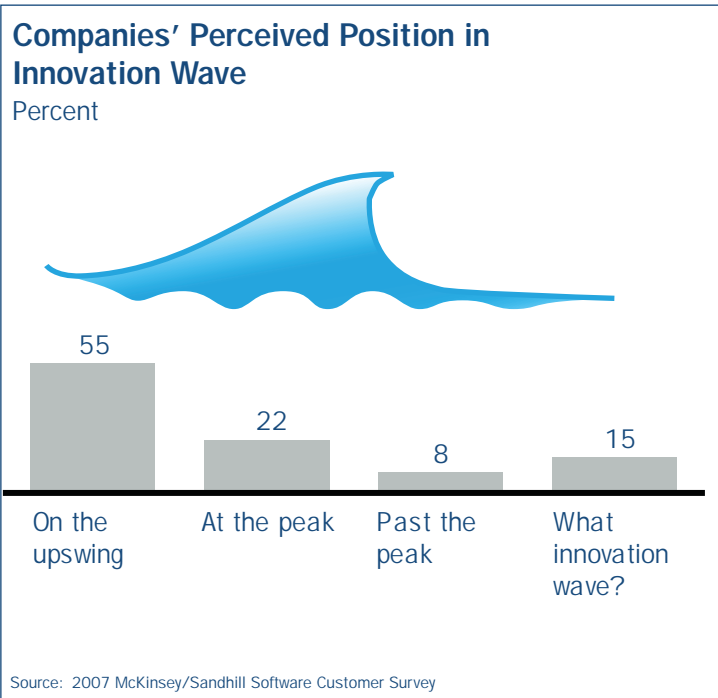
- Israel.** Israel’s Western business climate, coupled with a entrepreneurial population focused on high tech industries, has helped Israel become a world leader in technology, innovation, and venture capital. The ability to exit a deal is always a critical factor for a VC and is an area in which Israel is particularly strong – more Israeli firms are listed on the NASDAQ than any other country aside from the U.S. or Canada. IT-related fields have led all investments over the past 5 years, attracting nearly half of all invested capital (48 percent).

EXHIBIT 5



- **India.** India's legal, cultural, and business climate has helped it become one of the most dynamic centers for venture capital in the world. Indian startups continue to leverage their experience and expertise in IT by focusing on IT solutions that relate to back-office functions (such as financial services, accounting, human resources, and customer relationship management), and now there is also a greater emphasis on the consumer end of the product. India has both a large and dynamic public stock market and a collection of large companies interested in expanding via acquisitions. The maturing of India's domestic firms and the entrance of global PE/VC firms has also led to both increased deal and capital flow, as well as an increasingly competitive market.
- **China.** Leading VCs interested in capitalizing on rapid growth prospects, and a large pool of affordable engineering talent have quickly led China to become one of the largest venture capital markets outside of North America and Europe. In addition to funding companies looking to directly export products and technology globally, VCs also have the option of investing in companies that cater to the large and fast-growing domestic market, as well as companies that focus on serving foreign businesses in China (e.g., manufacturing). It is not an uncommon belief in the VC industry that the majority of new "home runs" will come from China. VC growth has been led by the high tech sector, which accounted for 56 percent of deals and investments over the past 5 years. The introduction of market reforms by the government, coupled with plans that support the growth of domestic technology and venture capital industries, bodes well for the industry going forward.





In the “1990 wave” of software innovation, diffusion occurred primarily in a top-down fashion. To offer just one example, the C-level executives at one company made a decision to install an enterprisewide supply chain software package and demanded that every employee further down the organization use it for the common good. Further, had this company been an industry leader, it could mandate that all its suppliers and partners use the same supply chain software.

We believe that today’s wave of software innovation has a different diffusion pattern. This wave is uniquely characterized by multi-directional diffusion, with an emphasis on bottom-up and center-out patterns driven by end users. Innovation is happening at the department level in middle management and spreading

sideways. As rank-and-file employees voluntarily experiment with new software offerings, innovation is happening in the field, on the factory floor, and in cubicles. This results in new capabilities which spread laterally first before they diffuse upward, reaching the CIO the very last, if at all.

These new diffusion patterns are due to recent disruptive technologies, collectively known as Web 2.0, which have focused more on how users interact with each other rather than how users interact with a central system. Web 2.0 software made its initial debut and gained the most momentum in the consumer arena, as opposed to the corporate arena. This is a reversal of the historical pattern where innovation starts inside the corporation and spreads to consumers. The result is an innovation wave benefitting from consumers’ higher risk tolerance than enterprise users towards experimenting with software, resulting in more creative adoption of new capabilities.

Significant innovation gains in software, built on the backs of consumers, have spread quickly into the corporation and come to be known by the term “Enterprise 2.0”. The origins of this trend led to a “consumerization of the enterprise” as workers began to demand and expect their office experiences with software to mirror their innovative home experiences. If an unrelated group of consumers was able to create value by collaborating on a platform for the common good, there was no reason why corporations could not replicate the innovative advances for their own interests. Once consumers became accustomed to using software and being productive on multiple electronic devices independent of time, place, or hierarchical status, employees went about reproducing those democratized advances in the office.

Software companies need to adapt to the bottom-up and center-out diffusion of innovation in three primary ways: 1) integrate the disruptive technologies into new products and services, 2) create new business models that are well matched to the bottom-up and center-out pattern of diffusion, and 3) ensure new business processes exist that allow organizations to be more responsive and efficient with these new tools.



Customers also appear enthusiastic and ready to invest in innovative new products and services. As one example, in a 2007 McKinsey survey on Internet technologies, more than 75 percent of respondents familiar with Web 2.0 trends are already investing in one or more of these trends. This is a truly global phenomenon as well, with investment which will be led by some of the Asia-Pacific markets over the next 3 years. When asked about plans to invest in Web 2.0 technologies, executives from regions that were slower to invest over the past 5 years indicated they are now positioned to invest more aggressively, including 80 percent of those from India, 69 percent of those from Asia-Pacific, 65 percent of those from Europe, 64 percent of those from China and North America, and 62 percent of those from Latin America.

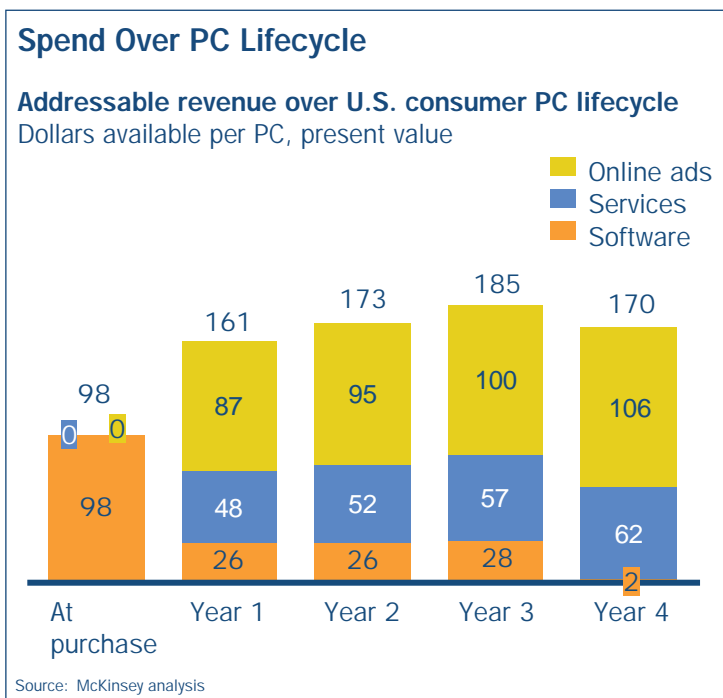
## Business Model Innovation

Enterprise 2.0 technologies will demand new and innovative business models matched to the bottom-up diffusion patterns. Enterprise 2.0 is founded on a set of bottom-up principles that will reverse the common rules of knowledge management and usage within companies. Enterprise 2.0 is:

- Interactive instead of passive
- Bottom up instead of top down (i.e., created by users and subject to large network effects)
- Unstructured instead of predefined (i.e., structures emerge and are refined based on usage).

Because the bottom-up diffusion model focuses on collaborative usage at the end-user level, it favors business models that will drive individual penetration and critical-mass attainment including examples like “try before you buy,” subscriptions, or even “free” models monetized by advertising or other ways.

EXHIBIT 7



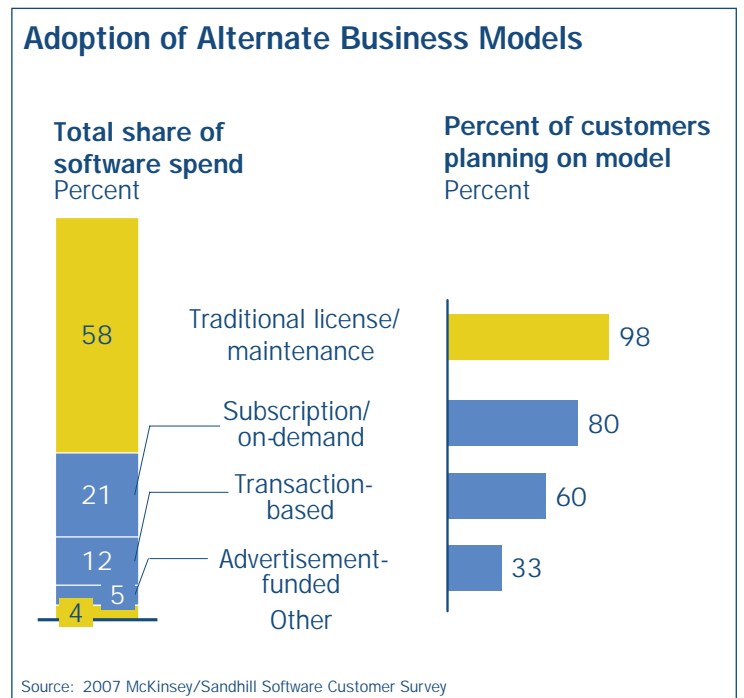
Additionally, trends indicate an increasing share of spend will occur over time as opposed to at the time of initial investment, and the software industry will need business models to claim its fair share of this spend. For instance Exhibit 7 shows the results of an analysis of the U.S. consumer wallet, which demonstrates that for the PC stack only 55 percent of software spend occurs at the initial purchase of the PC, with an additional 45 percent of potential spend available over years 1 to 4 of the PC life cycle. More dramatically, virtually no services or online-advertising revenues are realized at the initial purchase, however these will make up nearly 72 percent of the total potential revenue pool over the lifetime of the PC! Business models like subscription, pay per use, or advertising funded will be required for software companies to begin capturing their fair share of these out-year revenues.

The result of both the bottom-up diffusion model and the shift in value from initial purchases to later years indicates the share of total software spend commanded by alternate business models like subscriptions, transactions, and advertising-funded software will continue to increase. Indeed, Exhibit 8 shows that in a survey of software customers, the vast majority are looking for business models other than the traditional license and maintenance model: 80 percent plan some spending in subscription or on-demand models, 60 percent plan to spend in a transaction-based model, and 33 percent plan software purchases funded by advertising. In aggregate, software buyers predict that the sum of this alternate business-model spending may reach nearly 38 percent of their total spend in the next 2 years. While that may seem a bit aggressive, it clearly indicates the enthusiasm that the end customer is feeling for business model innovation.

### Process Innovation – Engaging End-Users Across the Business System

While closely understanding that the end customer has long been a key to success, the bottom-up nature of the current software innovation diffusion wave is making much deeper engagement with end users an imperative. Luckily for vendors, online technologies are providing the tools to engage current or potential user bases in ways that were never before possible. Real success stories exist today, and software companies that want to gain an edge and remain competitive in the future will need to embrace these user communities *across every aspect of their business system*. The five process innovation imperatives for software companies are:

EXHIBIT 8



**Inbound Marketing Process: “Netnography.”** According to a 2006 Pew Internet report, 65 percent of households have internet access, 44 percent have contributed content online, and 30 percent participate in chats, news groups, or blogs. This makes these online forums an increasingly pervasive and powerful window into end-users’ active and latent needs. Netnography is an online version of ethnographic research using online communities like blogs, chat rooms, or bulletin boards as the key information source. By selecting appropriate online forums and categorizing individual users (e.g., separating “tourists” and “minglers” who ask more questions from “insiders” or “devotees” that provide answers and drive opinion), software vendors have a fast, low-cost, and nonintrusive way of reaching lead users and specialist groups. Software companies should adopt netnography as a complement to other primary and secondary research tools, particularly as a way to access hard-to-reach end user segments such as lead users or new users.

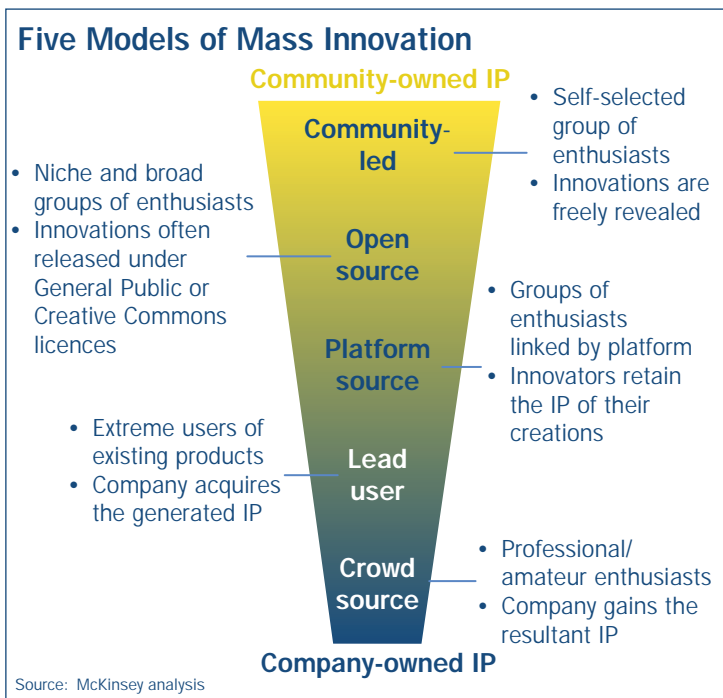
**Development Process: “Mass Innovation.”** Mass innovation provides powerful new models of innovation that companies may use to complement their internal development with the brainpower and creativity of enthusiasts

from around the globe. Three major trends have come together that are rapidly driving the mass innovation trend: improving computer hardware and software are giving a much broader set of people access to powerful development tools, the rise of virtual communities is linking individuals into much more powerful groups, and IP is becoming harder to protect, which is relaxing old constraints on shared development. From this, companies that embrace mass development are realizing a number of benefits including:

- Improved quality (e.g., 37 of 50 fastest web servers run Apache)
- Lower costs (e.g., iStockPhoto reduced cost of stock photos 100 times)
- Faster design and feedback (e.g., Myelin Repair Foundation collaborative research likely to release drug in 5 years versus 20 years average)
- Enhanced tailoring (e.g., Wikipedia has created 4.6 million articles in over 100 languages, compared to less than 130 thousand on britannica.com).

As shown in Exhibit 9, five successful models of mass innovation have emerged, each with differing profiles in terms of who innovates and ends up owning the IP. Software companies will need to select carefully which model (or models) will work best for their innovation needs, and begin to identify and foster the appropriate communities and relationships.

EXHIBIT 9



- **Community Led-Innovation.** In community-led innovation, a self-selected group of participants comes together to jointly discuss or create something and the innovation is freely revealed so there is no formal ownership of the IP. This tends to be a powerful tool for early identification of trends or connecting with lead users. A large number of technology and software-focused communities already exist (e.g., Technorati identifies more than 25,000 software-focused blogs and more than 45,000 technology blogs), so the challenge is for software companies to identify and tap those most reflective of their own customer base.

- **Open Source.** In the open source model niche and broad enthusiasts come together to develop innovations under general public or creative commons license. The open source software movement is the poster child for the model broadly, and has already had tremendous impact on the software industry (e.g., 75 percent of

DNS servers running on Linux, 71 percent of web servers). However, there is some evidence that open source has shifted from being seen as a major trend to rather a part of the mainstream in the software ecosystem – in our survey of software customers, open source ranked in the middle of the list (6th out of 8) of potential candidates as “most significant news story of the next 12 months.”



- **Platform Sourcing.** The platform source model connects groups of enthusiasts with a common distribution platform for their IP. Here the original innovators retain their IP, however access and related costs are greatly reduced. iStockPhoto, an aggregator of stock photography founded in 2000, has provided a common platform for individual photographers to share and distribute their IP and in doing so has reduced the cost of a stock photograph by a factor of approximately 100 while massively increasing the amount of source material available. Within software this model can be used to facilitate ecosystem development around a software-vendor’s core product (e.g., creating add-ons, tailoring, and widgets).
- **Lead User.** In the lead-user model, a company identifies extreme enthusiasts from existing communities and explicitly invites them to provide direct input into the corporation’s development process. In this model the corporation owns all the IP generated and lead users may receive nominal compensation or fame in return. Lego used their existing Mindstorm user community to create their next version, inviting four of their most extreme users to participate directly into their development process and paying these contributors in Lego bricks and kudos. Software companies may consider a similar approach, incorporating their leading-edge users into development to understand how their products are used in the real world and sourcing ideas from the workarounds their own customers are creating.
- **Crowd Source.** Finally, in crowd sourcing a company shares information and poses challenges to existing communities of amateur and professional enthusiasts and culls the best ideas from the responses. In this model the company acquires the resultant IP in exchange for the prize or compensation offered in the initial challenge. As an example, GoldCorp publicly shared 52 years of geographical data and \$500,000 in prizes for the identification of gold veins. From a short list of responses received, GoldCorp has struck gold in all four of the top targets. Software companies willing to share data with communities may find this model useful to pose and crack particularly tough problems.

**Outbound Marketing Process: “Participatory Media Marketing.”** Online communities have rapidly become a dominant forum in which to reach consumers and end users. According to Nielson/Net ratings for 2007, online participatory media communities will represent 27 percent of all page views, a share greater than any other category including search, commerce, content, and communications. Additionally, research from Forrester/Intelliseek shows that of 14 forms of advertising tested “recommendations from consumers” (with approximately 90 percent of consumers indicating some or complete trust) and “consumer opinions posted online” (with approximately 60 percent of consumers indicating some or complete trust) were exceptionally trusted (ranked number one and number four respectively), well ahead of traditional media like newspapers, magazines, television, or radio. Against this backdrop software companies will need to take advantage of online communities as a growing channel in which to reach their customers. A spectrum of options are available for software companies to participate and companies should consider starting with the no-regrets moves at the top and progressing through the higher risk/reward moves as they move down the list:

1. Extend the traditional online advertising strategy to include participatory media communities
2. Experiment with creative vehicles targeted specifically at participatory media sites
3. “Scrape” third-party participatory media sites for unfiltered user feedback on products or brands
4. Create or sponsor a structured forum for users to engage in a dialog on specific product or brand issues

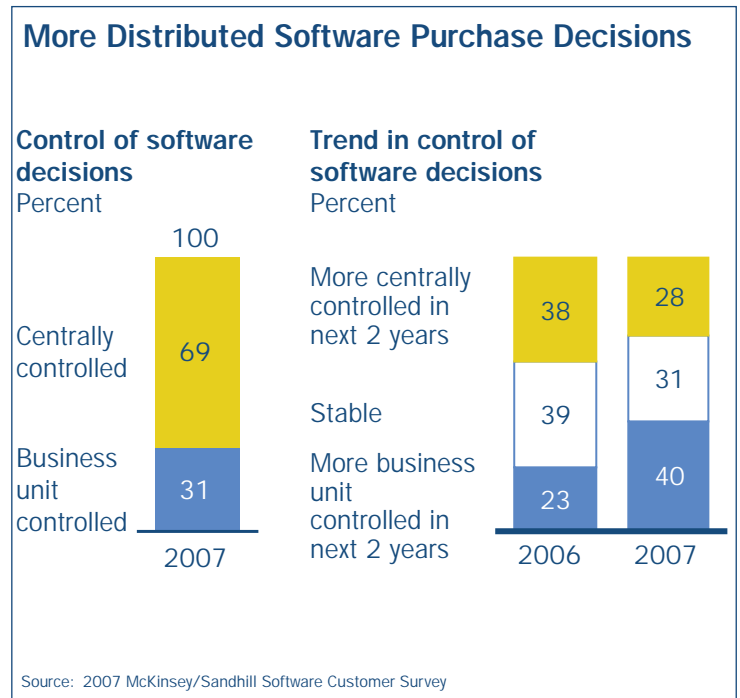
5. Actively participate in user discussions on products or brands
6. Build a business line around a new participatory media community site.

**Sales Process: “End-User Sales.”** Given the bottom-up nature of the software innovation diffusion, software companies need to similarly tailor their sales processes to explicitly include the business side end users and business leaders in addition to traditional IT contacts. As shown in Exhibit 10, while 69 percent of software purchasing decisions are centrally controlled today, software customers indicate that, going forward, software purchase decisions will be less central with more business-unit control (40 percent of respondents planning less central control). Aligned with this trend, respondents also indicated that business leaders would be formally consulted or final decision makers in 83 percent and business users in 61 percent of all software purchase decisions. To address this audience software vendors or partners using traditional direct sales or channel

approaches will need to continue to increase their focus on how their software is actually used and its benefits, communicated in the language of the end user. Similarly, vendors will want to experiment with novel sales approaches and licensing arrangements like the try before you buy approach that has caught on within the Software-as-a-Service world.

**Support Process: “Virtual Support Desk.”** Engaging user communities within online-support options is increasingly becoming an essential part of the support toolkit of packaged software companies both improving overall support quality and lowering direct support costs. In this model, end users answer product-related queries, both technical and business related, posted by other users in these support forums. As one example, roughly half of all traffic to a private-label user community for Intuit is support related, and users answer approximately 80 percent of the queries posted on the support forum of the community. While the model is still emerging, Intuit has already found that 15 to 20 percent of users prefer to search this user-driven support forum prior to calling the official technical support call center. Software companies will want to consider similar models, whether creating their own forums or sponsoring and encouraging private-label communities, as a virtual support desk run by end users.

EXHIBIT 10

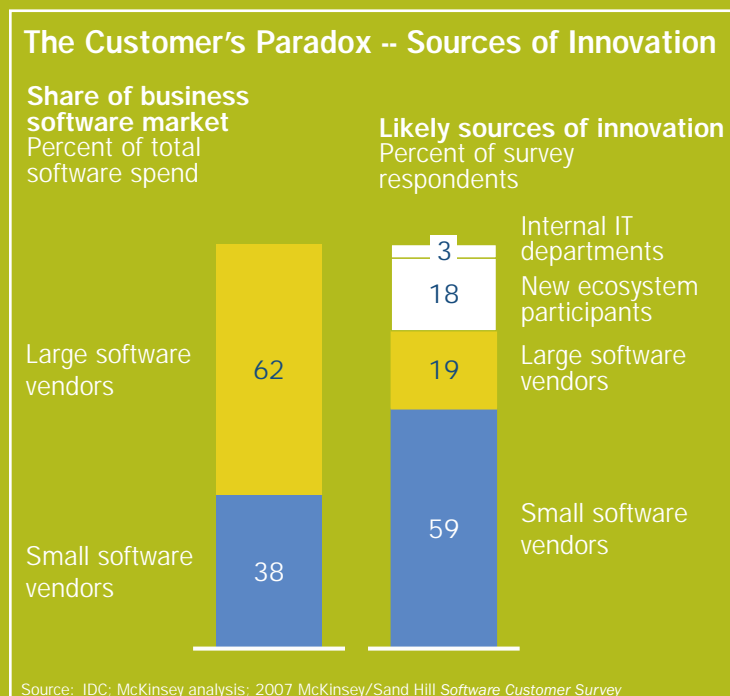


## Summary of Implications for Software Vendors and Customers

It is an exciting time for the software ecosystem, with healthy industry growth and margins driven by a wave of end-user driven innovation. In these good times software vendors and customers alike should take maximum advantage of these innovations. Key steps that should be on the mind of leaders include:

- Customers:** Customers have a paradox in front of them – how can a company that is increasingly spending their budget with the largest software vendors ensure they get access to smaller vendors who are driving innovation? Exhibit 11 shows that consolidation continues within the software industry with mega-vendors and large companies increasing their share to 62 percent of the average software budget (an increase from 59 percent in 2005). However, in our software customer survey 59 percent of respondents indicated they expect the greatest level of software

EXHIBIT 11



innovation to come from small software vendors, while only 19 percent believed larger vendors would deliver this level of innovation. The solution in this wave may lie in the bottom-up nature of the innovation diffusion itself – particularly with innovative easy-to-deploy software-as-a-service models, end users and business leaders may take on the role of the IT experimenter and shift the focus and spend on innovative smaller vendors outside of the IT department and into the budget of the line-of-business departments directly.

- **Vendors:** Software vendors need to adapt to the bottom-up and center-out diffusion model within this innovation wave. Ensure that your investments in product and technology innovation are well balanced with similar investment and focus on business model and process innovations. Focus on the monetization of recent disruptive technologies from this wave, embracing new business models when and where appropriate. Increase your overall transparency to customers and developers and work hard to operate with greater external leverage across your full business system. Finally, reexamine your own processes to make sure that you are pursuing maximum flexibility, as the winners in this era will be those who are fastest to incorporate all kinds of innovation into their business.