Selfsumerization: Transforming the enterprise

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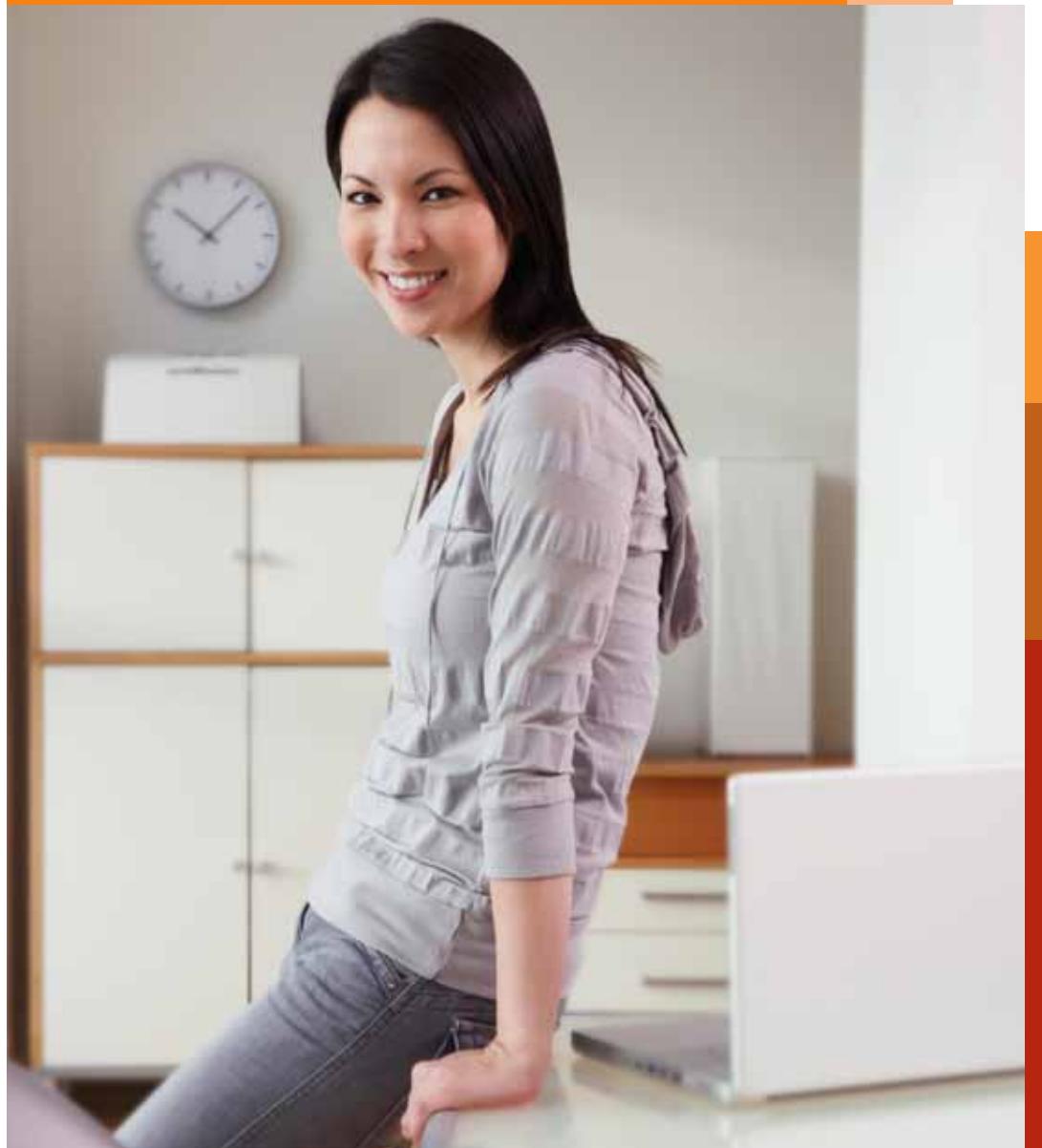
In this thought leadership paper, we introduce and explain emerging developments in "selfsumerization" of the enterprise arising from recent great advances in electronic devices, location awareness, 3D, cloud-mobility symbiosis, high-speed networking and the increasing presence of "Gen Y" in the workforce. Selfsumerization will lead to marked changes in the next two to five years in the way that private and public sector enterprises will balance versatility, risk, productivity and worker and client satisfaction.

Enterprise C-Suites, boards of directors, employees and clients in private and public sectors will likely find these insights thought-provoking and relevant to improving their strategies and services to increase business successes.

Introduction

The predominant thinking in the twentieth century was that consumers and workers were two distinct groups; one designing, manufacturing and then selling to the other. The reason for this dichotomy was largely that consumers and workers lived different daily lives, scarcely overlapping in the things that occupied them. They used essentially different appliances and tools. What connected them most were face-to-face meetings, telephone conversation, early-stage world wide web and email.

The twenty first century has brought unprecedented developments in mobile and portable devices and systems now used widely at both work and leisure. The gap between consumers and workers has closed—and is unlikely to reopen. Increasing ease of use and heightened versatility of devices have given consumers and workers at all levels, the ability to communicate, network, purchase, discover, pay, transact, negotiate, entertain, create and team across time and geographical boundaries. This truly is a sea change in human behaviour and to emphasize this we have given the name "Selfsumer" to describe what consumers and workers alike have become.

The selfsumer sees little difference between what is possible at work and leisure. Being ubiquitous participants 24/7, selfsumers cross from one activity to another as they please and as commitments require—regardless of location or time of day.

They are impatient, assertive and unwilling to accept classic enterprise communications and computing restrictions.

Selfsumers use their considerable laptop, tablet and smartphone skills to engage with sources of multimedia information. They use social communication to discover, discuss and team at play and work, and view and discuss product offerings from multiple sources. They expect, if not yet demand, enterprises to provide in-company social networking and collaboration applications to increase sharing, team efficiencies and work satisfaction.

Beyond transformation of advertising from paper-based to digital, the selfsumer's independence of mind and action is another fundamental change with which advertising agencies, manufacturers, retailers and governments have to contend, requiring them to think more creatively about providing new products, promotional content and e-commerce channels to service selfsumers. Advertisers have to adapt to selfsumers' aloofness to "hard sell" and cater to their new online skills, tastes and expectations, which are enabled by self-driven discovery and location-based and social networking technologies.

Selfsumers prefer to assemble their own bouquets of information, comparative knowledge and product selection, thereby providing themselves with truly personalized e-commerce experiences. The effect of this personalization on online commerce is becoming enormous. Mobile commerce was initially largely wireline e-commerce, somewhat adapted to a mobile platform. But with the rise of powerful smartphones, tablets and sub-laptops, this has changed, unleashing novel mobile transactions of many different types.

Selfsumers collaborate easily in the enterprise using micro-blogging applications, social networking, work groups, instant messaging and webinars. PwC Canada's *BlackBerry*™ app, Today's Opportunity, designed and implemented internally, is an effective micro-blogging method of linking early-stage business opportunities to workers having appropriate skills.

The selfsumer is indeed the new era employee. With greater numbers of so-called Gen Y or Digital Native workers entering the workforce, the percentage of selfsumers in enterprises and in their customer bases will grow markedly in the next two to five years. Business systems, including customer care marketing and sales, have to become increasingly selfsumer friendly,

if selfsumer talents and skills are to be used to the fullest extent. But there is another increasingly important development coupled with the emergence of the selfsumer: enterprise leadership in private and public sectors, not limited to IT leadership, is obliged to change from being highly prescriptive and regulatory in its dealings with people to being selfsumer-centric, both internally and externally.

Above all, selfsumers have agile, technology-savvy minds. They are borderless thinkers and doers, ready at all times to experiment with new tools, apps and services, stretching the control exercised on them by their employers— even to breaking point. In the next two to five years, high-speed wireless chips and sensors will be embedded into personal items including eyeglass frames, sport helmets and everyday clothing allowing selfsumer ingenuity and behaviour to evolve even further in unanticipated ways.

In the sections that follow, we explore the selfsumerization of workforces and businesses, along with the changing attitudes and consequent responsibilities of C-Suite executives in transforming and adapting their enterprises to meet selfsumer requirements, which in turn helps them meet client-centric objectives.

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Enterprise driven by mobile selfsumer and cloud

Selfsumer behaviour is becoming a major driver of change in small, medium and large private and public sector enterprises. In turn, selfsumers are becoming more productive and happy as new, easy-to-use and versatile technologies and applications become available to them, allowed and provided by their employers. The two-way street of selfsumers driving new applications, and applications driving selfsumers in their leisure and working lives, is a newly-emerged phenomenon likely to develop strongly because it provides benefits for businesses and workers alike. Selfsumers will drive enterprises to become more successful and in turn enterprises will drive selfsumers to become more entrepreneurial in fulfilling their duties.

Enterprise C-Suites will have to relinquish a number of inflexible controls and likely introduce new policies to regulate new devices, systems and services at a lower level of severity than in the past. By relaxing a controlling grip, they will gain benefits from selfsumers' borderless minds, ingenuity and actions. Enterprises will have to make it possible for selfsumers to operate entrepreneurially by allowing them greater freedom over their time, activities, budgets and the ways in which they formulate and achieve their business and personal developmental goals.

Born into a world of communication and collaboration technologies as Gen Y or Digital Natives, young people of all levels of ability and training are entering the workforce as versatile selfsumers. Their influence is inexorably beginning to predominate as retirees leave. Leaders of enterprises are realizing that selfsumers have their own technology and application preferences enabling them to work more productively and enthusiastically and also enjoy a good work-life balance. Ignoring this strong trend and its pressure on management will likely lead to premature departure of the most talented and skilled workers—especially at a time when attracting and retaining talent is one of the major business concerns identified in PwC's 15th Annual Global CEO survey 2012.

Already, a significant number of organizations worldwide provide a choice of several enterprise-approved devices or allow workers to use their personal smartphones, laptops and tablets for work. As these devices must be integrated into company IT systems to allow access to company databases, email and collaboration tools, new risk and security hurdles arise that have to be satisfactorily handled. New products, processes, systems or services require additional IT governance over mobile devices to maintain an adequate level of control and security over corporate data. But the rewards of relaxing strict rules on what can and can't be used for work are already being measured

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in lower staff turnover and increased productivity, especially of highly mobile employees or "road warriors" who are actively seeking out and meeting with new or established clients. The recent announcement that a forthcoming release of *BlackBerry* Enterprise Server™ (BES) will extend its highly acclaimed security management system to accommodate third party mobile devices has been welcomed as another useful step in the selfsumerization of the enterprise.

Enterprises began using cloud computing to reduce their in-house IT footprint, lowering hardware, software and operational costs. Cloud-based IT solutions allow enterprises to pay only for actual use of software, hardware, systems and applications, allowing greater versatility and savings. Cloud computing is becoming more widely used as confidence grows that availability, security and disaster recovery in the cloud are not show stoppers. Circumspect choices of cloud and digital network providers and careful drafting of associated service level agreements (SLAs) can provide high reliability and safety of cloud-based IT services. Accordingly, enterprises are becoming increasingly comfortable using cloud-based time- and security-critical solutions outside of their firewalls.

Early use of mobile devices enabled limited on-the-go access to enterprise e-mail and business apps. With the rise of selfsumerism, powerful smartphones, tablets and laptops connect not only to enterprise resources, but also to the cloud at large i.e. the Internet. Mobility is the most recent new impetus for use of the cloud, driving the development of a mobile Internet of websites and services specifically designed for mobile users. Versatile mobile devices are fast becoming pervasive thin clients i.e.

they are dependent on other primary sources, and are ideal for accessing cloud solutions when, where and how they need to. Without access to cloud computing, a mobile device cannot be used to full advantage; for example, location-based apps demand to be linked to databases and intelligent search engines which are far too large and complex to be accommodated on the device itself.

Cloud computing is becoming central to the business fabric of the future and is not just a technological solution to make IT less expensive. Companies will partner adaptively with others in the cloud to integrate mobile business processes as needs arise, increasing versatility and reaping new revenues. The emergence of easy-to-use mobile cloud applications is creating a powerful cloud-mobile symbiosis, a trend already visible and valuable.

Mobile communications will play increasingly important roles in employee effectiveness and efficiency. Ultra-high-speed 4th generation (4G) mobile networks known as Long Term Evolution (LTE) already are emerging worldwide. WiFi, ubiquitous in homes, offices and public hotspots, will also likely evolve further to WiGig™ and Wireless HD™ ultra-high speeds. Beyond the introduction of such 4G networks, ongoing LTE enhancements will increase speeds above 100Mb/ second, later even reaching Gb/ second speeds. This will change the way knowledge workers interact with knowledge sources allowing multi-participant, high-definition video conferencing and access to video sources in the cloud to be almost immediate. It will be of the utmost importance—both for the survival and growth of organizations—to upgrade to such networks and provide their workforces with advanced access devices.

Development of flexible, even roll-up, screens and low-power-consumption electronics will likely lead to tablets becoming easier to carry in hand, pocket or pocketbook—changing them from portable to truly mobile. Tablets and newly announced ultra-thin laptops ("ultra notebooks") will likely converge as advanced graphical, gesture and voice interfaces and low power consumption microprocessors become available. Already available as pocket-sized devices, miniature projectors will become integrated into mobile devices, allowing display of charts, presentations and videos on a nearby wall or other convenient surface. As flexible electronics become integrated into clothing and fold-up high-quality displays are perfected, selfsumer computing will increasingly become integrated into personal work and leisure.

Pressure on top line and bottom line results is likely to persist even as worldwide economies revive and therefore long distance business travel costs will remain in the spotlight. With the integration of high quality web cameras, high definition (HD) displays and 3D effects into computing and communications devices, video conferencing will be used increasingly for geographically distributed meetings.

Combined voice, video, whiteboard and text collaboration at a distance in design of products, processes and systems will become commonplace, allowing teamwork across time zones and countries. Training of workers will be increasingly participative, reducing training time and increasing understanding and retention. Already a new generation of e-book textbooks and user guides is emerging that allows interaction between the learner and the book's content through quizzes with answers and interactive simulations of scientific, engineering and financial experiments that may be updated automatically with new discoveries and inventions. This trend will have positive effects on education and training in enterprises and next-generation e-books will likely become platforms for multi-reader participation through transparent interfaces to social networking communities and special interest groups.

Selfsumers increasingly use portable and mobile devices for online purchases and to negotiate group-buying deals through social networking. While on the go, they are finding conveniently located stores to visit, that are offering in-the-moment special deals, including deeply discounted group pricing for consumers and enterprise buyers alike. Mobile buying is becoming a strong driver of easy-to-use, secure, mobile payment apps and these are already complementing conventional credit and debit card use. Emerging payment options based on near field communication (NFC) will allow selfsumer "tap-to-pay" mobile purchasing. Selfsumers will request mobile expense claim and compensation payment in the working environment requiring enterprises not only to credit bank accounts, but also to deposit directly into mobile device wallets. Secure mobile commerce apps will unchain enterprise buyers from their desks, enabling "walk about" estimating of purchasing needs of different business divisions and immediate refill ordering using handheld devices.

Serious games and 3D in the enterprise

The use of games and 3D immersive techniques in the enterprise will rise. Well established in leisure games, 3D online situational experiences provide personal involvement as avatars in massively multiplayer online role playing games (MMORPGs) that provide experience in strategy and hone operational skills in complex situations.

MMORPGs already have a strong history of use in situational military training and such applications will be adapted and spread to business strategic planning and execution. There is evidence that team leadership experience in MMORPGs leads to development of strong skills in strategic planning and tactical operational management. No longer are such games seen as whimsical entertainment; indeed, game-based enterprise skills development is referred to as "serious games."

Embedding 3D objects and designs into real-world situations as new forms of augmented reality on smartphones and other mobile devices will find application especially in inherently graphical and contextual industries including architecture, advertising, marketing, movie-making, urban and harbour front design, surveillance, mining and utilities, where objects and equipment need to be placed for aesthetic or engineering effectiveness. Once again, selfsumer leisure and entertainment effects, that began a decade or more ago in animated movies, are entering enterprises in greatly improved form to have positive effects on business solution acceptance and performance.

Always considered serious forms of games, football and similar spectator-sport industries are about to go high-tech in unprecedented ways.

During the next two to five years, high-speed wireless chips will likely be embedded into helmets, footballs, hockey sticks and boots, and handheld 3D instant replays for in-the-moment strategy adaptation will drive entirely new dimensions of sporting events and spectator thrills.

Three dimensional (3D) printing is another important wave of 3D development that is gaining in size and effectiveness. This had its origins in the 1990s in rapid prototyping machines for industrial use. Durable polymer prototypes of mechanical parts could be built in a polymer-liquid bath by using ultraviolet light to solidify the liquid polymer, layer by layer, under computer control. Use of these machines was confined to industry by their high cost. New technologies have now enabled the cost of such machines to be reduced drastically—as low as several thousand dollars—and, at the same time, the versatility of 3D printers, as they are now called, has been enhanced greatly by the introduction of new materials and superior computer-aided design (CAD).

Selfsumer designers are now beginning to use 3D printers to produce objects using in-house 3D equipment or 3D printing services, which then deliver the finished articles to their designers. They will use 3D printers in the enterprise in both large and small companies in many industry sectors. Reasons for this trend include the need to bring designs and finished objects to the marketplace faster and market them in engaging ways to be ahead of fast-moving, innovative competitors. 3D printers can produce goods ranging from artistic vases to functional aircraft parts, adding an entirely new dimension to design, prototyping and production industries.

Social networking and selfsumer relationship management (SRM)

Selfsumers know that tacit knowledge—the accumulated knowledge, experience, education and training stored in human heads—is the richest database that an enterprise possesses. Selfsumers also know that tacit knowledge can be unleashed and shared as never before by connecting people ubiquitously through social networking and its closely related partner—collaboration. Prior to web-based social networking, tacit knowledge had scarcely been captured because it had not been easy to tap, summarize and save adequately in conventional computer databases. Up until the advent of the current high-speed digital age, tacit knowledge was shared by "putting our heads together". Formal meetings, cocktail parties, talking on the telephone and chance meetings in corridors or at water coolers have been the traditional ways of sharing this accumulated personal knowledge. Through these traditional mechanisms, people shared tacit knowledge on an ad hoc basis. Beginning with the emergence of e-mail in the 1990s, these chance encounters began to formalize online. However, times change and people change with the times and e-mail, not being a natural social networking tool, could not keep up with all the demands of sharing and collaborating. E-mail enables direct interactions with one or a few persons on a specific topic, but is limited in its ability to involve the participation of larger groups.

It's important not to be blindsided by conventional practices when thinking about social networking and discovery of information in the enterprise. Just how effective innovative thinking and action can be in combining the skills of selfsumers with social networking is illustrated by the following real life example:

An international group of companies wanted to find persons in their workforce with a combination of skills and experience of a very special nature which was not explicitly tagged in their databases of worker qualifications. An innovative selfsumer suggested logging into an external social networking site to search the external community in the hope of finding pointers to suitably qualified workers employed in the international group. At once, this external search found the names of several of the international group's own workers who were suitable for the task at hand. This enabled the international group to assemble a team from their internal resources answering the particularly unusual client need. So going out to an external social networking community found appropriately qualified and skilled workers internal to the international group of companies that searching their own internal databases had failed to find. We expect to see many such novel cross-linking enterprise uses of social networking in the years ahead, and it will be selfsumers who drive this.

While social communication (networking) is well established in the consumer and leisure world, it is only now beginning to play a major role in businesses. Increasing use will be made of social media designed for specific business purposes including collaboration with clients. Mobile, social and collaborative communications and multi-person video conferencing will add important enhancements to productivity in the enterprise. Key to effectively formulating, implementing and using social communication and other selfsumer-based applications in business is to start with a clear definition of the problem by first asking and answering the questions: "What is it that we want to do, that we are not doing now?" and "What are we not doing very well?" Having answered these questions, undoubtedly with the aid of selfsumer insights, appropriately novel solutions will likely be found.

In an increasingly competitive, fast-moving business world, in which workers, clients and consumers continue to transform themselves into technology-savvy selfsumers, enterprise C-Suites are realizing that customer relationship management (CRM) will evolve into selfsumer relationship management (SRM) as a key driver of success in business. The twenty first century enterprise includes permanent and seasonal workers, as well as contractors and consultants, all of whom are becoming mobile communicators. Each worker has one or another form of client contact, requiring systems that will have to go beyond conventional CRM to provide easy access to comprehensive dashboard renditions of all that is required to be known about the customer, whether at their desktop or on the go. We foresee future intelligent computer systems and end-user devices providing this consolidated information to selfsumer workers automatically, depending on the nature of a particular client engagement, its stage of completion, the day's upcoming meeting agenda and the presentations and reports that are likely to be discussed.

Online CRM has been a pioneering cloud-based, pay-as-you-go version of CRM that we believe will evolve into SRM using automatically configured, mobile dashboard solutions. We have coined the new expression "Anticipatory Discovery" to emphasize that search, which puts the onus on the user to find relevant information, will evolve into automatic provision of all that is necessary for the upcoming task, thereby moving beyond conventional search to anticipating needs in real time.

PwC Canada has developed client-oriented dashboards on tablet computers including the *PlayBook*™ and iPad™, in an innovative step towards anticipatory discovery, serving mobile selfsumer workers. Providing technology advisory services to clients on how to position themselves and provide at-a-touch, in-the-moment, comprehensive information is a practice offering likely to grow substantially during the next few years.
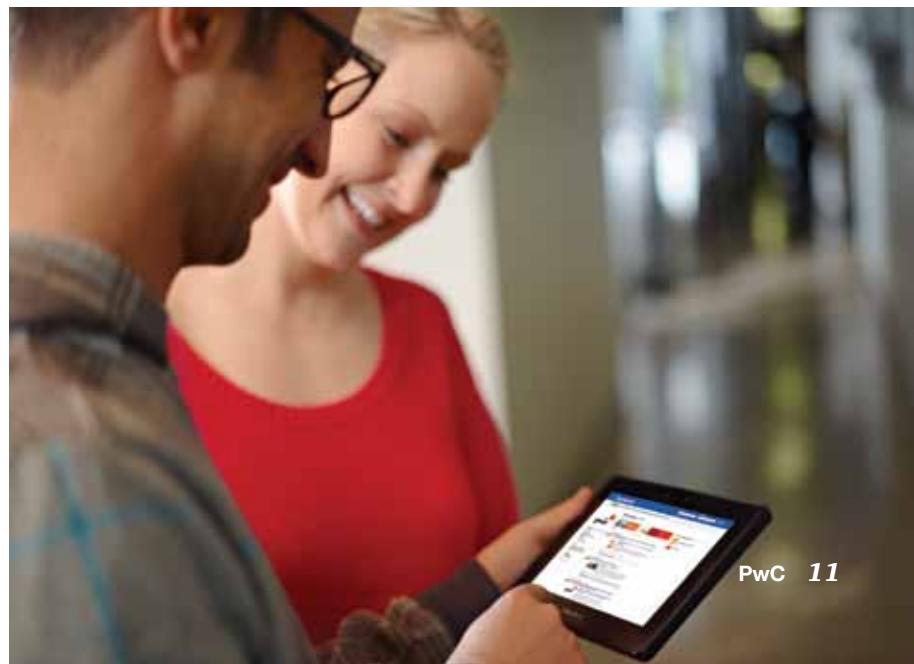
CIO and C-Suite evolution and innovative next steps

Adapting to selfsumer needs and pressures, and introducing useful applications in anticipation of what workers will want, is a complex change management journey for CIOs and their IT staff. Awareness of heightened expectations by the workforce, including C-Suite colleagues, is increasing demands for innovative and agile planning and implementations, beyond what was adequate in yesteryears. While traditional risk, security and regulatory factors continue unabated, new ones emerge to challenge the CIO including determined criminal attempts to enter and manipulate transactions, databases, voice and data communications and computing services. Not only is the intrinsic business role of the CIO changing and expanding, but also enterprise C-Suites are experiencing new challenges from the world of selfsumer workers and clients. To be more effective, leaders realize that it is imperative for them to develop an understanding of selfsumer minds.

Selfsumer clients and workers alike expect to be inspired; they want enlightened directives, systems, procedures, solutions, applications, advice and recommendations that are easy to understand, implement and use. They require organizational progress to be quick and measurable, also relative to other competing organizations. And, they expect their own recommendations to be considered seriously and discussed with them in a personal, rather than procedural manner. Selfsumers crave to participate, not merely receive instructions and information. Increasingly, they expect the Internet and company intranet to be a "Participative Web"—a realistic, un-hyped, professional friend and colleague providing reliable contextual information and using multimedia and social dialogue to find team members and enable discovery of solutions to problems of the day.

Companies need to innovate at a faster pace to keep up with changing demands in markets, globalization and customer expectations. Globally, speed of change continues to increase, so an organization's flexibility to support that change in a cost-effective fashion, becomes critical.

Forward-thinking CIOs are exploring avenues to use mobile technology to create better ways of servicing customers. They are capitalizing on the continually developing power of mobile capabilities to build participative multi-channel relationships with them. An aspect of mobile computing that is now evolving very quickly is driving efficiency within the enterprise using social media. Many organizations already have customer-facing social media strategies. But the most innovative companies are also increasingly focused on social media to create an internal community, providing selfsumers within the organization easy access to the firm's collective knowledge and skills, and a tool to collaborate effectively on client engagements.

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The evolving role and skills of CIOs loom large in selfsumerization of enterprises and achieving new business successes.

Mobility, coupled with cloud computing, is developing into an essential business practice. C-Suites are fast realizing that not accepting these changes will make them miss out on having a highly productive and efficient workforce and will hamper their ability to attract and retain new talent. Gen Y or Digital Natives who have grown up with mobile technology fully expect to be able to access and use this at work. C-Suite executives have to support core business objectives with new technologies and applications that enable greater worker effectiveness and attract a motivated workforce, which is vitally important to achieve future business success.

Best practices for creating and implementing a selfsumer strategy

Some best practices for C-Suites in private and public sectors to consider when creating and implementing a selfsumer strategy:

- Balance the internal and external focus; selfsumers are both within and outside the enterprise.

- Engage with selfsumers up front—before deciding on solutions.

- Be early to adopt selfsumer ways of working.

- Be flexible, but not whimsical, in introducing new technologies, applications and ways of working.

- Start small and build, as experience grows.

- Set business end goals. Technology improvements should translate into increased sales and revenue, improved quality, better control of costs and greater employee and customer engagement and loyalty.

- Relax outmoded enterprise controls. Become more adaptable and flexible, making good use of selfsumer borderless thinking and actions and increase versatility to deal effectively with ongoing opportunities and challenges in business and economic conditions.

Boards of directors of private and public sector enterprises can expect their future searches for appropriate C-Suite and technology executives to focus on persons with a deep understanding of selfsumer requirements and skills in satisfying these requirements. The evolving role and skills of CIOs loom large in selfsumerization of enterprises and achieving new business successes.
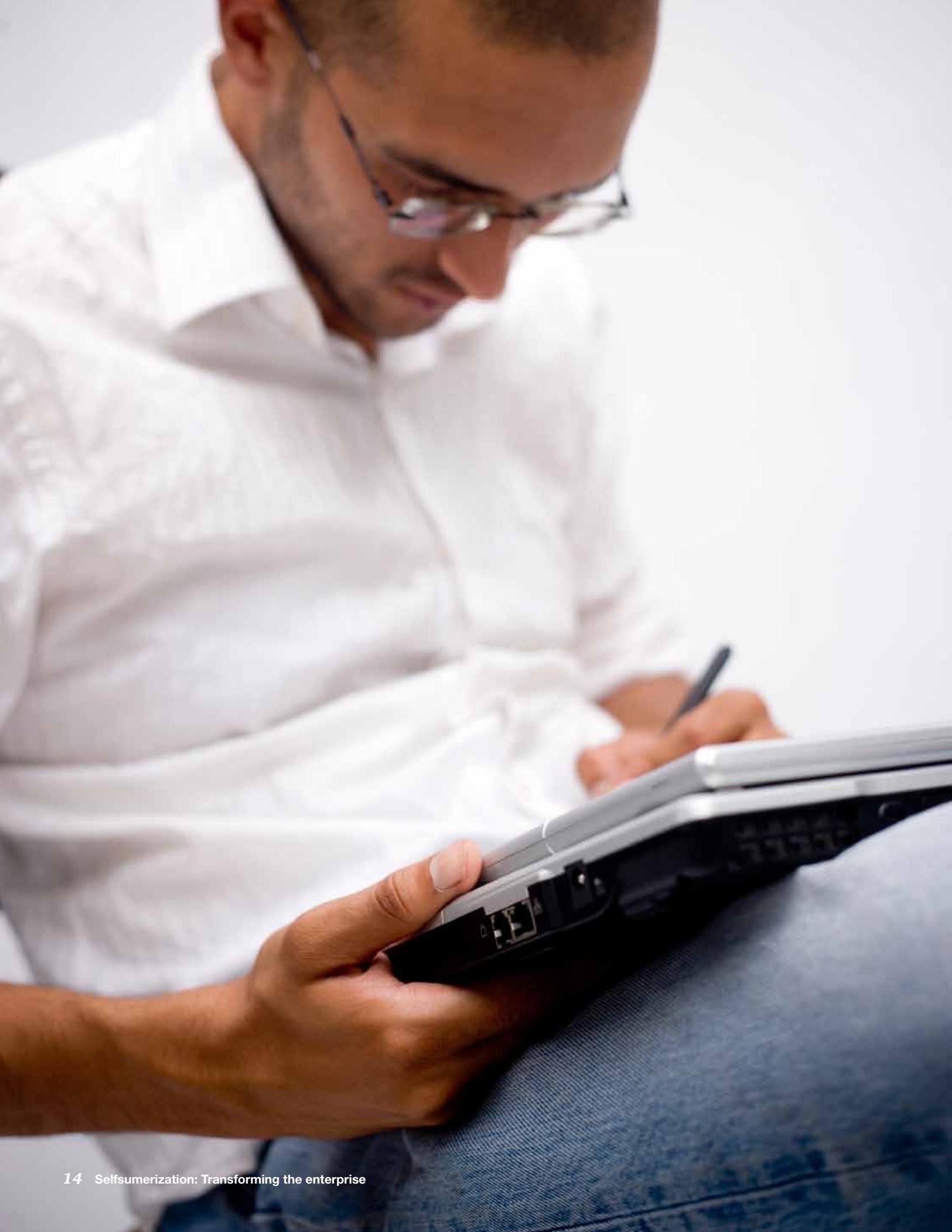
Conclusion

This paper reveals a number of ways in which selfsumers are driving private and public sector enterprises toward innovative use of new technologies and business solutions, thereby expanding and deepening enterprise productivity and successes. It also explores how enterprise C-Suites can be ahead of selfsumer requirements in anticipating developments to make enlightened use of their workers. As selfsumer trends continue to mature into effective business disciplines and best practices, PwC's Technology Consulting specialists work with clients assisting them to selfsumerize, to achieve stronger enterprise performance.

Recommended reading

To view these materials, please click on the title.

"Driving enterprise performance: Emerging developments in enterprise information management"

"Digital mobility drives you – You drive digital mobility"

"The consumer-led mobile smartphone transformation"

"Unlocking tacit knowledge with social networking"

"The maturing of social networking into a business discipline"

"The power of social media – How CIOs can build business value using social media"

"Embracing the new"

"Enterprise Shifts to Mobile-Only Workforce: BroadSoft Report"

"Making Science Leap From the Page"

"Virtual Worlds, Real Leaders: Online games put the future of business leadership on display"

"IEEE Wants Virtual Worlds to Be Taken Seriously"

"3D Systems to Acquire Z Corp and Vidar"

"Are You Ready for IT consumerization?"

"1 in 10 CIOs want to be a revolutionary"

"Unwiring the Enterprise: Are You Ready to Lose Control?"

"Video Telephony Has Finally Arrived"

"Sorry tablets. Laptops still dominate the enterprise."

"Newer economies allow more high tech freedom at work"

Watch the videos

For more information on digital transformation, including digital mobility, social media and collaboration and cloud computing, scan the QR code or visit **www.pwc.com/ca/digital-transformation** to watch the videos and download PwC publications.

PwC Technology Consulting Services

Selfsumerization transforms the enterprise

We believe that recent advances in selfsumerization, cloud computing and mobile technologies, powered by strong networks and Big Data and large enterprise data warehouses (EDWs), have created unique and compelling opportunities for organizations to become more effective and efficient within well-defined risk and security limits. The ability to effectively manage and provide information to knowledge workers at all levels in real time within the organization, can create a myriad of efficiency and effectiveness benefits. Balancing benefits and risks is new and there are continuously evolving operational and security implications to consider.

PwC's Technology Consulting practice enables clients to learn about and implement best practices to make the most effective use of selfsumerization of the enterprise. We continuously monitor and evaluate emerging strategic and operational practices for client use.

From business transformation to technology delivery, PwC helps you realize business value from your IT investments. We can help your technology team enable business transformation and improve the return on investment (ROI) on technology spend by increasing the performance of your IT function or developing an IT governance structure that is right for your business.

We find opportunities to improve your business value in five broad areas:

- **Technology Advisory:** Providing a suite of strategic consulting services to improve the efficiency, effectiveness and alignment of your IT function.

- **Information Management:** Working with you to develop analytical and technical tools to unlock the value of information within your system.

- **Sourcing:** Addressing the issues that come with alternative sourcing models to achieve value that goes well beyond cost savings.

- **Security:** Helping you manage, transform and protect your organization's most critical information assets to enable new strategies, technologies and processes, effectively govern risk, and meet compliance demands.

- **Enterprise Applications:** Applying our solution-specific skills to help you realize business results from your investments in enterprise applications.

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