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1 – CONSUMERIZATION

CONSUMERS LEAD, BUSINESS FOLLOWS

Many of the great technological innovations of the last century were designed to meet business needs, although most eventually found their way into mainstream consumer applications. For example, the first integrated circuits went into mainframe computers sold only to large businesses and the military, but later proved essential to the development of the personal computer. Business led, consumers followed.

In the 21st century that process has been reversed: technological innovations are developed commercially first for the consumer sector, and then find their way into business applications. As a result, popular commercial technologies have dramatically altered how businesses operate (think iPods, Instant Messaging, thumb drives, MP3 players). Today and in the future, consumers lead, businesses follow.

Businesses are therefore learning to follow consumers. For example, companies are using data about what consumers are searching for on the Web to help with product research and decision-making on the design, naming or marketing of products.

This pattern, called “consumerization,” is fairly new, writes Russ Banham in *CFO Magazine*, but represents a profound shift.

In fact, according to Gartner Research, consumers now have a bigger influence on business technology than IT managers – the very people charged with overseeing business technology. Consumerization will be the single most important trend in corporate IT over the next decade, predicts

Gartner. In just the next 5 years, technologies like **image recognition**, **desktop search**, **mash-ups** (re-combinations of music, video, web site content, etc.) and **social networking** will likely change how commerce itself is conducted.

IMAGE RECOGNITION

At the popular web site Like.com, online shoppers can search for items that resemble the ones they may have seen anywhere else: on other web sites or TV broadcasts; in magazines, catalogs or movies; in fashion shows or somewhere out in the world (captured by a cell phone’s digital camera). This may not seem like a major advance, but it is. Visual searches will create an entirely new way to sell.

Online retailer eBags.com, for example, carries more than 25,000 products – handbags, luggage and backpacks – that would take consumers several weeks to browse. But shoppers on Like.com can graphically circle an item in a photo and find it, or a reasonable facsimile, in the eBags inventory.

How would other businesses apply this consumer-instigated technology? Businesses could use image-recognition software to discover what competitors are charging for a particular product, or to find components or materials needed to make their own products. Because the software can search for something based on its visual appearance, the problem of finding it through language alone is eliminated.

DESKTOP SEARCH

Internet search engines were developed for PCs, but search tools are beginning to show up on

Trend Analysis That Builds Business Decisions

corporate computers as well. Desktop search engines – programs that enable users to seek data on their computers, much the same as they search the Web using Internet search engines – will dramatically increase the efficiency of workers. Desktop search engines can go through all files, attachments and emails and find everything a user has accumulated on a particular subject or project.

Yahoo has recently teamed with X1 to offer an enterprise version of its popular consumer desktop-search product. Likewise, Google's Desktop Search, a feature the company started offering to consumers for free a year ago, is beginning to find converts among business users.

MASH-UPS

Another technology application started by consumers but being adopted by businesses is the mash-up, a combination of Web sites or other content from various sources (including graphics, voice and video) into a single display. Mash-ups (which take their name from the sampling phenomenon in the music industry) are relatively simple and inexpensive to create, relying on established Web resources and scripting languages to deliver information in innovative ways. Business applications are sure to take off.

The first for-profit mash-up, Housingmaps.com, combined Google maps with Craigslist to create real-estate listings with driving directions. But in the nearly two years since that site was created,

mash-ups have gotten a lot more creative. Realtors, for instance, can take an online map and add virtual pushpins to it. A customer can click on a pushpin and see a video of a house, then use embedded Internet phone service to talk to the selling agent.

This multimedia potential also makes mash-ups ideal for internal business applications such as human-resource portals or training programs. Mash-ups are currently the biggest thing coming from the consumer side of the Web into the enterprise environment. Expect many more applications in the near future.

SOCIAL NETWORKING

Virtual communities such as MySpace and Friendster started out modestly but are now an integral part of teen life. Initially, business managers saw little use for these cyber meeting places. That's changing: companies are now realizing that social networking can be an excellent forum for marketing and management intelligence.

According to Jupiter Research, the technology also offers a way for managers to find their next job or obtain market intelligence, augmenting their ability to succeed in their current job. In fact, a number of social-networking sites, including LinkedIn, specialize in connecting corporate managers. And then, of course, in case you haven't heard of it, there's Second Life...

2 – SECOND LIFE

VIRTUAL REALITY

Second Life, created by San Francisco's Linden Lab, is a three-dimensional online society that has captivated and entranced more than 1.3 million people around the world. Once subscribers set up their avatars in Second Life, they can travel the world, buy virtual fashions, go on virtual vacations,

build up virtual businesses – just about anything people can do in the real world. Avatars buy and sell using Linden dollars, the currency of the Second Life world, which can be exchanged for real US dollars, so people can make real money. Reportedly, more than 100 people now earn full-time livings selling virtual land, clothing, jewelry, weapons, and pets and offering virtual services in Second Life.

Consulting in:

- Market and industry analysis
- Strategic business direction
- Growth dynamics

Providing:

- Trend identification and analysis
- Keynotes and presentations
- Proprietary research and reports

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Linden Lab claims Second Life is profitable. Thousands of users earn thousands of real dollars a month. Real companies are selling their digital wares, including Adidas, Nissan, Sun Microsystems, Reebok, Penguin, American Apparel, Reuters, Toyota, CNET Networks, PA Consulting, Yankee Stadium and Bartle Bogle Hegarty.

BUSINESS APPLICATIONS

What are potential corporate uses of Second Life? According to FinancialWire, major companies including Nissan and Reuters have begun hiring people from inside the virtual reality game for jobs developing content. Second Life already houses several major corporations, including Dell and IBM. People can post their avatar and job skills on the game and conduct a virtual interview to get hired for a variety of positions.

Second Life is essentially an interface, an advanced way of communicating with and through a computer network. Early business participants have been consultancies and communications companies. PA Consulting, for example, last year constructed a virtual campus using architectural elements from its London headquarters, its technology centers in Melbourn and Cambridgeshire, and its offices in Copenhagen. The objectives were to provide a complementary marketing tool to the company's web site, and real-world marketing operations to help with recruitment.

Despite initial skepticism, the concept took off rapidly and is already being used for education, collaboration and innovation within the company. It recently held its first worldwide conference involving 30 offices across the globe. According to a report in the *Financial Times*, each office entered into the spirit of the fantasy, dressing their avatars in clothing appropriate to their geographical location. The company also discovered that the presence of "real" people is important: it now employs "greeters" globally and around the

clock to welcome virtual visitors and point them towards the information they want.

SL AT SUN AND IBM

Sun Microsystems, a leading manufacturer of computer hardware and software, is another company that has decided to experiment with Second Life to understand what is going on in terms of the next mode of communications. The company hosted the first Fortune 500 press conference in the "Sun Pavilion" in Second Life late last year, an event attended by 60 avatars including journalists, software developers and Sun customers.

For Sun, the chief advantage of the virtual world is the ability to create a product – new computer hardware, for example – and test it to destruction in Second Life, then allow potential customers to give it the same treatment. While Sun offers customers the ability to examine and study its products in its pavilion, the company is adamant it will not do commercial business in cyberspace – at least, not yet. The problem is security. Second Life is self-policing but the technology remains vulnerable.

While some firms are using virtual worlds as marketing tools, IBM's ambitions seem to be more about internal system tools and making services available to employees and customers. IBM uses Second Life to immerse its thousands of new employees into its company culture, as a training tool, and as a mentoring community. Other applications the company is trying include making presentations available for customers and staff, trying out real-world products in Second Life's virtual world, and a translation service for international interface.

The arrival of CEO Sam Palmisano's avatar in Second Life helped paved the way in legitimizing this kind of activity within IBM.

3 – TECHNOLOGIES TO WATCH

Other social networking-enabling technologies are about to hit the marketplace, and will have both consumer and business applications. Most involve what is still called the cell phone. Tomorrow's "mobile information terminal," however, will also be used to watch TV, video and movies; listen to music; surf the Internet; read books, magazines and newspapers; get weather and traffic reports; send text messages; play games; locate and get directions to people and places; take photos and shoot video; transfer funds (make payments for goods and services); and who knows what else.

New technologies are finally allowing high-speed data networks to deliver capabilities to the cell phone that rival broadband connections to computers. The result will be multimedia, Web access and business services. The technologies (and some of the companies, note investors) that will make this possible, write Cliff Edwards and Moon Ihlwan in *BusinessWeek*, include the following:

- **WiMAX.** Designed to blanket whole cities in broadband, WiMAX is WiFi on a larger scale. A global standard, it lets users surf the Web at cable speeds, even on the road. Backed by Intel, Motorola, Samsung and other tech giants, WiMAX could go head-to-head with "third-generation" cellular technology that's rolling out right now. Sprint plans to begin building a nationwide WiMAX network this year, joining Clearwire and others.
- **IPMS (Internet Protocol Multimedia Subsystem).** This technology would essentially link up all appliances and electronic devices over the Net. Each one then becomes its own Internet "node," able to interact with all the others. Early applications might include cellular handsets that can switch between Wi-Fi access and cellular frequencies.
- **Fuel cell batteries.** Mobile data applications drain battery life quickly, and traditional lithium-ion batteries aren't keeping pace with

rising power demands. Tiny fuel cell batteries that run on replaceable methanol cartridges, on the other hand, could last several weeks. They'll be sold by Gillette/Duracell at retail and used in mobile phones and other portable devices by late this year.

- **OLED Screens.** Organic light-emitting diodes are the likely successor to liquid-crystal displays. They are thinner than LCDs, consume less power, and light up when charged (so no need for a backlight). Some handheld gadgets already use OLED screens, and manufacturers are ramping up production.
- **Near-Field Communications.** NFC is short-range wireless technology for transmitting data between cell phones and other devices. Nokia, Sony and Philips see it as a step up from Bluetooth wireless. NFC chips open the door for an endless range of mobile commerce applications. It has already arrived in Korea and Japan, and McDonald's, Visa and MasterCard are testing it in the US.

Once the technical issues are fixed, the rollout of such technologies could disrupt the business models of both gadget-makers and content providers. Figuring out who gets paid for which parts of business generated will raise contentious issues. There is opportunity and danger for big players and small. And of course, in a world of consumerization, innovation is often followed by consolidation.

Cisco Systems, for example, has just acquired Five Across, a small social networking company whose software allows businesses to add user-interaction functions and multimedia-sharing capabilities to their Web sites. The publishing platform allows users to post text, photos, videos and audio clips. As a way of attracting and retaining core customers, allowing them to establish virtual communities on your company's web site may constitute the next frontier in competitive business advantage.