

INTRODUCTION

"U-commerce is a dynamic convergence of the physical and the digital, the interface of brick-and-mortar commerce with Web-based wireless and other next-generation technologies in ways that will create new levels of convenience and value for buyers and sellers."

"A term u-commerce has been created in the Internet world that refers to commerce that can be conducted anywhere and any time in that it is a fusion of e-commerce, m-commerce (mobile commerce), t-commerce (television commerce) and bricks and mortar. It means seamless movement for Consumer. U-commerce means that customers can come from all angles - today they may be in a showroom, tomorrow they may come at You via a Website, Cellular, telephone or interactive television.

U-commerce: The Big Bang Theory

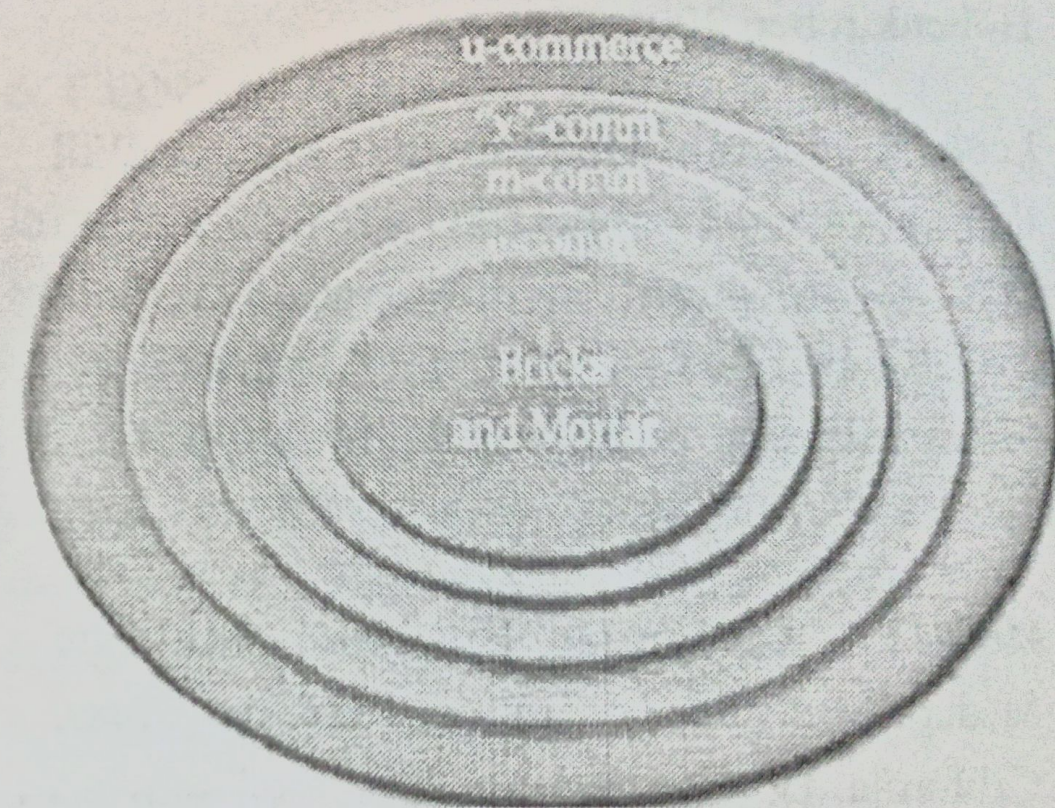


Figure 1

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NEXT-GENERATION NETWORK EFFECTS

In the past few years, e-commerce has joined the vocabulary of many languages. Many organizations talk of "Icommerce" or the use of intranet technologies (internal corporate Internets) to pursue internal marketing strategies. Already, m-commerce (mobile commerce) is gaining currency as cell phone owners acquire access to mobile services such as Delta Airlines' arrival and departure information service for mobile phones and personal digital assistants (PDAs). Marketing practitioners will be very concerned with the impacts that these technologies will have on their organizations and on their relationships with customers. Marketing scholars will need to study how these technologies will affect the discipline to determine whether existing theories will explain the phenomena adequately or whether new theories will be needed. Likewise, marketing teachers will want to keep their students at all levels abreast of events and developments, for they will be better equipped to deal with turbulent work environments if they at least have a point of view. Where are we ultimately headed? We believe that in the next few years, we will see the emergence of a multifaceted u-commerce, where the u stands for ubiquitous, universal, unique, and unison. We can think of it as Über-commerce over, above, and beyond traditional commerce. Thus, we define u-commerce as the use of ubiquitous networks to support personalized and uninterrupted communications and transactions between a firm and its various stakeholders to provide a level of value over, above, and beyond traditional commerce. We now elaborate on each of these four features of the next generation of commerce.

There are four Fundamental dimensions of u-commerce.

1. Ubiquity,
2. Uniqueness,
3. Universality,
4. Unison.

Ubiquity allows users to access networks from anywhere at any time, and in turn, to be reachable at any place and any time. Computer will be useful everywhere. Basically we can say cheap will be embedded in our daily life so as to be benefited by Internet & wireless technology supported by Intelligent systems. E.g. Payment technology is becoming ubiquitous, shattering past constraints of location and functionality. It can now connect the smallest rural community, enabling it to conduct commerce with the rest of the world. Uniqueness allows users to be uniquely identified not only in terms of their identity and associated preferences, but also in terms of their geographical position. Avail only services what you want. Every program will be customization of your needs. It will be according to your roles in daily life. Download songs to make your mood or transfer sales records to your business data server on the spot of sale. Everything is unique and customized. Universality means devices are universally usable and multi-functional. Due to Internet and satellites your desktop, laptop, cell phone, or PDA will avail free mobility and lots of information at any time.

Unison covers the idea of integrated data across multiple applications so that users have a consistent view on the their information-irrespective of the device used. Consistency means if I change an address in my phone book it should reflect changes in my cellphone, calendar and PDA simultaneously.

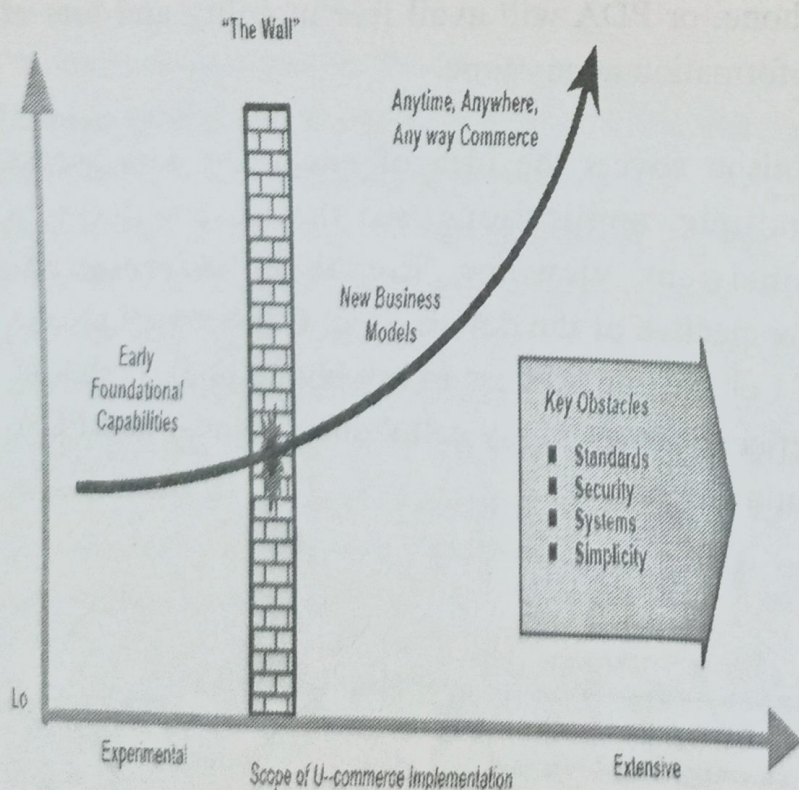
USING U-COMMERCE IN REAL WORLD

Visa is committed to making its vision of universal commerce a reality, creating a world in which payment transactions can occur anywhere, anytime and in any way. Visa U.S.A. is exploring new Internet-enabled point-of-sale appliances that will be connected to a service portal for merchants, integrating customized payment and value-added non-payment Services.

Volvo implemented a wireless enterprise solution to automate its data collection process to inspect cars and improve quality assurance.

The wireless solution enables the salesperson to at any location present the customer with current promotional offers, up to date financing information, price and model availability in Fiat.

Remote product monitoring: With use of sensor technology developed by Graviton, Coca cola will monitor soda fountains to monitor syrup usage. Doctors can access patient data as well as pharmaceutical and insurance information through Ready Script's wireless, handheld, point of care device.



In short, u-commerce is the creation of a marketplace that reaches individuals where they are at using the devices that they want to use, with the networks doing the work without the user needing to intervene.

THE BUILDING BLOCKS OF U-COMMERCE

Let's consider a potential u-commerce scenario: a traveling business executive decides to get something to eat and using her wireless handheld computer checks out local restaurants, gets directions to the restaurant of choice, has a meal, beams payment information from her handheld, and gets an electronic receipt beamed back which automatically synchronizes with her expense report. It sounds good, but all of the elements needed to make this happen are not yet in place. For example, the required system interfaces, the customer service systems, and the billing and settlement systems have yet to be integrated.

Coordination is also needed among the many parties that contributed to getting our customer fed: the portal that carries the restaurant information, the carrier that calculates the customer's proximity to the restaurant and provides directions, the restaurant itself, and the company that provides the mechanism for payment. Creating a u-commerce environment characterized by pervasive, continuous and seamless interactions requires breaking through a "wall." Beyond this wall development activities can proceed at an accelerated pace.

This "wall" consists of a number of fundamental factors that need to be addressed, which we call the four S's: systems, standards, security, and simplicity.

Standards -- Common standards are a necessity. They allow devices to "speak the same language." Much in the same way the Open System

Interconnection (OSI) model describes how applications and devices should communicate, or how Transmission Control Protocol/Internet Protocol (TCP/IP), a subset of OSI model for the Internet, describes Internet standards, new interoperable standards are needed throughout the u-commerce environment.

Visa's strategy toward the development of standards is clear: Make them flexible, make them open, and make them free, in order to maximize the scale, scope and rate of adoption. One example is Open Platform, a smart card standard supported by Sun's Java Card and by Microsoft's Windows for Smart Card that allows "plug-and-play" applications to work with chip based smart cards. This Visa-created open standard enables retailers or hotels to create loyalty programs, or health care organizations to incorporate health or insurance information, or virtually any business to integrate its own value added application with payments. Even Visa competitors are embracing Open Platform for their chip-based products.

Another example is Visa's XML invoice and travel and entertainment (T&E) standard for business-to-business commerce. Through this standard, called the Visa Global Invoice Specification, anyone needing to send or receive an invoice or T&E data can use this single specification instead of each potential partner's unique, specialized invoice format. Visa views standards as a key area for collaboration and cooperation so that we create a global infrastructure within which we can all compete.

Security As money and information become more digital and are transmitted across more devices, channels and borders, the security of the transaction becomes increasingly more critical. Two of the key challenges in such an environment are to extend the same kind of security that exists in the physical world to virtual transactions and to

ensure the privacy of users involved in the transactions. It is no secret that security concerns have mushroomed in recent years. According to an Accenture survey of Fortune 1000 companies, 70 percent viewed security as a top Internet issue. And in the U.S. in an FBI and Computer Security Institute study, one-fifth of all firms surveyed experienced theft of proprietary data. Over the past 30 years, Visa has continuously developed new security tools and processes to protect the integrity of electronic payments.

Today, U-COMMERCE: losses due to fraud are less than one tenth of one percent of global sales volume. Extending the same level of security to new payment channels is imperative and should focus on two key areas authentication of the parties involved in a "virtual" transaction and ensuring that the privacy of account data is preserved no matter where it resides in the payment chain. The Visa Secure e-Commerce Initiative addresses both of these issues with a suite of solutions, including globally interoperable authentication for merchants and cardholders, and best-practices and self-assessment tools for merchants.

Systems Remember our scenario of the hungry traveler? Not only are the systems missing to calculate and distribute value across the chain of players involved in getting her fed, but so are the systems to seamlessly integrate the information across the various transaction components. Given the number of players likely to be involved in any u-commerce scenario, it is unlikely that one player will ever control the end-to-end system. The alternative is to create more connectivity between systems. But this is complex given the multiple databases and legacy systems likely to be accessed. This is the dilemma Visa faced. Given the explosion expected in the number and types of electronic payment transactions in the future we knew that our current proprietary network, VisaNet, needed to evolve. Our response was to

begin building new infrastructure to handle the volume of these new transactions and guarantee access to our systems anywhere, anytime, through virtually any type of interface, with the 99.999 percent reliability Visa has delivered through VisaNet for more than 20 years. This response led to three related initiatives:

To allow more access to VisaNet, Visa U.S.A., working with Accenture, launched Direct Exchange. This IT initiative increases the ability of Visa's processing infrastructure to handle the projected demands of u-commerce by opening up the system and allowing greater access at U-COMMERCE: This Paper is define 10 the endpoints. Direct Exchange is one of the largest e-infrastructure projects in the world. It will enable VisaNet to process more than 10,000 transactions a second, more than double the volume possible today. To enable a higher level of customization of our global processing system, Visa launched the VisaNet Distributed Processing Solution (VDPS). This initiative will give Visa's operating regions more flexibility to configure processing solutions that meet the needs of their customers, while ensuring the global system has the scalability needed to accommodate continued growth in transaction volume.

Simplicity Perhaps the most difficult challenge is integrating technologies in a way that is both compelling and simple. Without simplicity and ease of use, failure in the consumer environment is almost guaranteed. The marketplace is littered with consumer applications that failed because of irrelevance, complexity or prohibitive adoption costs. In this emerging world of u-commerce, sustainable technologies will be those that not only make life more convenient, but also make it simpler. Just because something is technologically possible does not necessarily make it relevant or compelling to the consumer. And just because something promises to make life simpler, like an

electronic wallet that enables one to automatically populate online forms, does not mean that someone will go through a complex set-up or installation process.

The swipe of a card at a merchant terminal, the quick scan of a chip card reader, or the Palm-enabled Visa transaction described earlier are U-COMMERCE: models of simplicity in the u-commerce environment.

AN ORGANIZING PRINCIPLE

U-commerce is not just a phenomenon; it is also an organizing principle. As technology rapidly drives the convergence of many different spaces information, entertainment, financial services, payments, communications u-commerce can help us think more expansively and holistically. It's a vision that compels us to transcend borders be they geographic or technological and build links. And it's a vision that reminds us technology is valuable only insofar as it makes sense to the user somehow making his or her life more convenient, more interesting and more productive and presents a clear business case. U-COMMERCE: The potential for innovation is tremendous. As U.S. Treasury Secretary Paul O'Neill put it: "The potential for productivity gains in the U.S. economy is higher than we realize. If you look at the penetration of good ideas (into the base of existing technology), we are still at the 20-30 percent level of what's possible."

We believe that is true not just in the U.S., but on a global scale as well. We are bullish on technology, but we are even more bullish on the ability of people to adapt technology in productive, innovative, and surprising ways. And that is at the heart of our vision of universal commerce.

CONCLUSION

Major innovations in our ability to process information have been the bedrock of cultural, social, political, and economic change. Ubiquitous connectivity to information and computer-processing power will be a profound change that represents the ultimate consummation of the digitization revolution that started more than a century ago. Ubiquity will have major consequences for marketing because of its central role in creating wealth. After all, it is marketing's role to discover consumers' wants and persuade

them to exercise these wants. Marketing's task for the near future is to discover how firms will successfully create value for consumers in the era of u-commerce. In the bigger scheme of things, e-commerce currently has an incremental impact on marketing. If we think of ecommerce as trade that takes place over the Internet, then it really is not so revolutionary; the Internet is essentially just another marketing channel. Many online initiatives have evaporated as consumers have shown their unwillingness to shop using a computer interface.

This may be because they want to see and touch products and deal with real people, or it may simply be that real shopping serves an important social function. The argument that e-commerce is still "very new" hardly washes any more, as it has been around for nearly 6 years and the takeoff rates have slowed.

SUGGESTED READINGS & RESOURCES

1. Accenture (2001). "The Future of Wireless: Different than You Think, Bolder Than You Imagine." Cambridge, MA, Accenture Institute for Strategic Change.
2. "U-Commerce: The Ultimate" - By Richard T. Watson
3. "U-commerce Fact sheet" - Visa