Concepts for Next Generation Smart Real Estate and Living Communities

Anas Sawaf

Emerging Theatre Smart & Connected Communities GTM, Cisco Systems International B.V., Dubai, UAE

Mirosław Skibniewski

Politechnika Białostocka, Wydział Zarządzania, Katedra Informatyki Gospodarczej i Logistyki

Abstract

As we move into a new phase of the internet economy based on knowledge, services, and interactions – and into a new landscape of global competition – the needs and requirements of individual tenants and users within our communities are changing. As a result, real estate developers, service providers and operators must adapt their business processes, create new standards and concepts for sustainable real estate properties. In the very near future, properties will act as a foundation for stronger partnerships between tenants, supply chains, operators and the rest of the players in the value networks within the real estate business.

Today's businesses are starting to adopt and evaluate new standards to improve the manageability, sustainability and communication performance of their buildings' environments in order to create new profitable business architectures. These changes will allow businesses to interact with customers in new ways – delivering unique experiences at any location, any time, with any content, on any device. Real estate developers can make this happen through new internet-based interactive communication services that deliver a total branded experience in a sustainable way throughout the living cycle of the tenants, while offering owners and operators new visibility into their building operations. A total branded experience at every touch point will have an impact inside the residential and commercial communities for all people, whether they are tenants, employees, guests, residents, or just passersby.

Creating a total sustainable branded experience should be the ultimate objective for real estate developers. An advanced IP-based network, owned by the developer or out-

sourced, can serve as a future-ready branding platform and deliver real estate sustainability, a differentiated experience, higher valued space, and new revenues. These communication networks can offer tenants flexibility, and accelerate the development of new business value chains thereby strengthening the social and cultural links among residents, organizations, and businesses.

Introduction

The quantum leap in computation capabilities and the proliferation of the new wave of Internet-based solutions have allowed organizations to generate more intersections for communication and create new innovations. Increases in performance and new means of communication have provided a platform for collaboration across the globe. For individuals, companies, organizations and government agencies that used to work separately, this communication platform today provides a way to collaborate, interact, combine various disciplines, and provide different services, ultimately allowing all stakeholders to create new intersections of their background and expertise. These opportunities are available to all, from large corporations to small pizza shops to government agencies.

This article highlights value propositions at the intersection of networking solutions with real estate, and how those values are leading to the development of smart sustainable communities. It will discuss the ways in which the adoption of advanced networking technologies will lead to the creation of stronger business within the value chains of tenants, operators, developers, and service providers.

1. The transformation to experienced-based real estate

Historically, nations, governments, and individuals built and developed properties to support the prevalent economic activity. In agrarian economies, we built farms and barns. In the industrial age, we built factories, manufacturing facilities, and warehouses. Today, we are embarking on an information age, in which new economies are based on knowledge, services, and interactions.

This new internet-based economy is having an impact on real estate development. Tenants, owners, operators, developers, and service providers have different needs, and they are looking to differentiate themselves in the market. Advances in data, telephony, video, and wireless technologies have affected many industries in which real estate plays a key role. For example, environmental sustainability

is becoming a critical issue for many organizations, Technology is playing an increasing important role in achieving this sustainability. By taking advantage of the new possibilities offered by technology innovations, key players in various industries are becoming pioneers in their own space, working environment, culture, and community.

Long ago, the banking and retail sectors realized that to be competitive, they needed to adopt a new, experience-based business architecture that emphasized the delivery of new and better services to customers. Many began to adopt Internet-based solutions and advanced collaborative & interactive communications technologies as a means of reaching customers. These new business processes in turn sparked a revolution in the way interactive customer service was provided and led to the creation of new advertising concepts and sales models.

This need to create new, dynamic business models to fulfill the demands and expectations of today's and future consumers and tenants is the driving force behind the adoption of new interactive IP-based business solutions. These solutions are starting to impact new real estate developments and drive the establishment of future-ready cities and communities. Despite the fact that space in such communities is increasing in cost, many organizations and individuals are accepting these new digital locations as they allow them to adopt new business models that provide unique, value-added services otherwise unavailable.
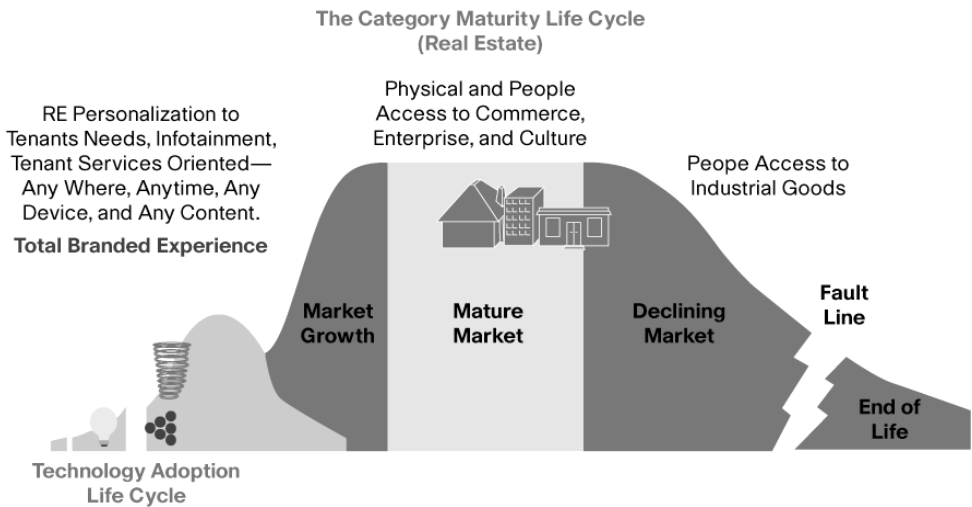

Fig. 1. Category Maturity Life Cycle; adapted from "Dealing with Darwin" by Geoffrey Moore[6]

Many businesses and government leaders are pushing the concept of "digital community location" in which new digital communities are being built to host residents and businesses. However, such development concepts are still in the growth phase and have not become a main stream market yet with full potential as illustrated in Figure (1).

As we move into Web 2.0 and beyond, into Web 3.0, many strategic thinkers are predicting that in order to interact within and between marketplaces and societies where future tenants have the power of information at their fingertips, developers will need to adapt their construction business processes and real estate concepts accordingly. The adoption of IP-based communication solutions will make the creation of new digital interactive services and sustainable offerings a reality while catering for the needs of next generation tenants.

There is no doubt that the convergence of technologies, processes, and services is contributing to the emergence of new experiences and to a morphing between the physical world and the virtual world. For example, you can send instant messages and receive advertisements on a personal digital assistant while waiting for an appointment and having a side conversation. The Internet and advanced networking and communication solutions will allow real estate developers, service providers, and operators to provide tenants with the ability to have further reach to both worlds in a more personalized and customized fashion. With the increase in competition, these services will become more important and relevant when selling or leasing properties, or doing business in general.

Developers can differentiate their buildings and communities by offering highly mobile individuals remote communications and interaction services that are cost effective, convenient and preferable for most end users. For example, a child in California can reach a tutor in as far away a place as India through a school portal, saving parents hours of drive time locally and conserving local school energy costs while providing a convenient platform for collaboration. A virtual workforce of contractors can work seamlessly from a home office or a corporate location, by having round-the-clock access to building services; from the corporate VPN to the video conferencing system, or to physical assets which they could only otherwise have access to by entering the building after hours. These examples highlight the transformation of an analog society, in which people drive out to buildings to do things, into a environment where virtual opportunities are supported by the buildings themselves, offering the ultimate in flexibility and adaptability, while cost effectively meeting the needs of end users.

2. Next generation buildings: Sustainable, flexible, virtual

Realizing that competition is no longer about products but about new business models, processes, and strategies, many real estate developers and operators have begun to specify and create IP communication standards to deploy the latest innovations that will cater for sustainability, new services, better operational visibility and more accurate billing to their tenants. These next-generation solutions include energy-efficient building systems, business intelligence, communication and collaboration tools, Web-based solutions, middleware, and grid computing in data centers that will provide the foundation for next-generation operators to manage building environments in a more cost effective, sustainable, flexible and functional way.

In addition, today's corporations are starting to take steps to improve the sustainability and environmental performance of their real estate operations. Many are looking at how building systems can be integrated in efficient and intelligent ways that increase sustainability and are friendly to the environment. As buildings become more efficient in their energy creation, consumption, management, and reporting, space needs will change, potentially resulting in reduced CO2, electronic and office waste. For example, designing an intelligent IP-based solar energy cooling system that can deal with office heat gain can reduce the energy cost of a building up to 90 percent, according to data gathered from operational projects. Currently developers are looking to deploy communication solutions in buildings to allow the physical buildings to adapt intelligently and cater to the lifestyles of tenants and the working needs of organizations, rather than the other way around.

New Internet-based solutions will allow for improved customer interactions that deliver unique experiences – at any location, any time, with any content and any device. For example, a Cisco telepresence video conference solution could be used as a tool for leveraging the exisiting IP communication infrastructure to connect people around the world, reducing the need for flying trips, which in turn leads to less CO_2 emission by Airlines! Real estate developers can offer these business benefits to organizations by creating a next-generation sustainable business park that provides future-ready IP-based interactive communication services, and delivers a total branded experience throughout the working cycle inside the community for all people – from employees and guests, to residents and tenants, or simply passersby.

It is worth considering here Thomas Friedman's statement in his book The World Is Flat, "Because when the world starts to move from a primarily vertical (command and control) value-creation model to an increasingly horizontal (con-

nect and collaborate) creation model, it does not just affect how business gets done. It affects everything—how communities and companies define themselves, where companies and communities stop and start, how individuals balance their different identities as consumers, employees, shareholders, and citizens, and what role government has to play."

Regardless of the real estate development structure and whether it supports retail, banking, or a residential community, providing the tenant with a unique enhanced experience is a high priority. In the world of Web 2.0, communication infrastructure embedded within buildings and communities should facilitate the kind of horizontal interactions and collaboration referred to by Thomas Friedman.

In fact, developers should be aware that tenants need to be able to access their customers globally at various points and through various channels – on TV, online, in a retail shop, in the lobby of a building, on a billboard, in a telepresence room, or through desk video telephony. Real estate developers and service providers need to build new standards and innovations, and deploy communication solutions and sustainable services in the community to bring new value-added interactions to their tenants, whether these be businesses or individuals.

3. Defining the Total Branded Experience

In the next generation of real estate, adopting an IP communications strategy in the early stages of real estate development will provide the feasibility and ability to scale and cater to new customized and personalized services. In these new real estate communities, future tenants and organizations will be able to create partnerships and interactions that support them as they redefine their lifestyles, business models, and partnerships with customers or suppliers.

Today, we live in a world where people are interacting across various value networks, creating human networks that overlie the value networks. These physical and virtual interactions are key to maintaining and improving the loyalty of tenants and customers, which is itself fundamental for increasing profit and wallet share. Standardized IP-based communication technologies in smart buildings or communities can easily enable the evolution and transformation into new value networks of stakeholders.

For example, using intelligent IP communication solutions, clerks at a retail chain store in a shopping center can have real-time communication with their suppliers, access a supplier's production plant to check production status, schedule delivery, and have their products received by their logistics centers with a mini-

mum of human involvement. This can all be accomplished through integrated, IP-based solutions that allow warehouse systems to identify the truck from a certain distance, log the entry gate, process the handling request, alert security, and request handling automatically using RFID and real-time location services operating on a single IP platform. This example shows the power of an open system IP-based platform that allows the delivery of a total sustainable branded experience – from manufacturing to product delivery.

4. Improved Operational Visibility, Services & Efficiencies

Converged technologies in buildings and communities can provide developers and operators with a huge amount of useful information that, if used intelligently, would serve as a key competitive differentiator for many residential and commercial tenants. This information can be collected, stored, analyzed, and used by developers or operators to make intelligent marketing decisions regarding new value offerings and enhanced experiences for customers, tenants, residents, and corporations at multiple stages.

Creating physical connectivity between buildings is no longer enough. The availability of interactive communication links (virtual and physical) among various stakeholders is increasingly more important. These links create a virtual community that maps and overlies the physical community, delivering tenants and customers intimacy (stickness) to enhance loyalty and increase productivity by providing a diverse range of services that meet the needs of various tenants in the community. For example, Buildings 2.0 is a new concept, created by the industry thought leaders and it is defined as follows:

"Buildings 2.0 is a vision that intricately intertwines buildings with Internet technologies. It is a vision that the future of buildings is one which is controlled, managed, and connected to the Internet in a way that goes far beyond simply placing a web server to the control system or in the use of IP. . . . Buildings 2.0 will present to building owners, developers and operators a new and alternative value proposition, an alternative view to the traditional ways that we have all looked at buildings in the past. The Buildings 2.0 proposition goes beyond looking at buildings simply as a box to house people or things, but an active component of real-time enterprises that makes the world what it is today." (Kim, Mauborgne 2005)

With interactive digital services embedded in the Buildings 2.0 communication infrastructure, collaboration and interactions between tenants, developers, opera-

tors, and service providers – onsite and offsite – are streamlined and easier to use, leading to happier and more productive organizations, tenants and customers. The accessibility, predictability of systems, and application intelligence will facilitate and improve the interactions among supply chain members, and strengthen the value links between organizations. The linkage between business intelligence and building information systems will provide a personalized experience that has value for all stakeholders in the community – developer, operator, landlord, owner, and tenant.

By rolling out standards and specifications for a comprehensive new and advanced Internet communications platform, developers and service providers will be able to expand and deepen their own experiences through the delivery of unique profitable services, driving brand loyalty and increasing the value of their tenants' space.

For the operator, increased efficiency, improved performance, personalized customer service, reduced energy consumption, and reduced operating expenditures are reasons to deploy an Internet-based Facility & Energy Management solutions . For the tenant, the benefits lie in the unprecedented and unique experiences they would receive – comfort, practicality, security, safety, convenience, and ultimately a "tailored and branded" lifestyle in which the community infrastructure and stakeholders--developers, operators, and service providers – are adapting and catering to his or her needs.

Conclusion

Creating sustainable real estate developments with a total branded experience should be the ultimate objective for real estate developers. With such an objective, new Internet-based communications platform integrated with real estate enterprise applications serve as a sustainability tool, branding platform, experience differentiator, space valuator, and revenue generator. When these solutions are in place, the embedded communication network will act as the backbone for all tenant interactions, both physical and virtual, enabling collaboration, sustainability, customization, and personalization of profitable services between the developer/operator and the various other stakeholders – residents, visitors, passersby, and suppliers/customers.

This is a chance for developers to allow tenants and organizations to use a building or a community as a competitive advantage that would lead to business success and a sustainable high living standard .

References

1. Young J. F., The Jamesan Group, 1992. *The Information Age and the Potential Effects on the Commercial Real Estate Market*.
2. Friedman T. L., 2005. *The World Is Flat: A Brief History of the Twenty-First Century*. Farrar, Straus and Giroux, New York.
3. Budiardjo A., 2007. *Buildings 2.0*. Witryna internetowa. Tryb dostępu: www.automatedbuildings.com, stan z kwietnia 2007.
4. Kim W. C., Mauborgne R., Blue Ocean Strategy., 2005. *How to Create Uncontested Market Space and Make the Competition Irrelevant*. Harvard Business Review.
5. Moore G. A., 2005. *Dealing with Darwin: How Great Companies Innovate at Every Phase of Their Evolution*. Penguin, New York.