Quite possibly everything required for transformational change in how our industry operates is now in place. All the components - clouds, integrated solutions, smart devices and mobile technologies - are present, inexpensive and reliable in what is being called the post-PC era.
Introduction:

Today’s global economy is forcing executives, governments and consumers to adopt a new way of thinking. The financial crisis and the deep recession that ended in 2010 caused a seismic shift that has reshaped the global business landscape. Likewise companies are adopting a new way of thinking regarding the investment and use of technology. Some have suggested that we must re-invent IT much the way manufacturing was re-invented in the 20th century to realize the benefits of a connected world.

Given the magnitude of uncertainty from these economic shifts, companies, governments and investors will remain hyper-sensitive to risk. At the same time, consumers are more informed than ever before. Technology has provided consumers with a wealth of data that allows them to compare prices, research products and connect with others to leverage their buying power. We are seeing the emergence of what has been called a “new normal economy” which is in part influenced by several technology trends that will be discussed in this paper.

Trends:

The shift to the new normal economy alone would be enough to trigger a major transformation of global business trends and strategies. But it has coincided with a wave of new digital technologies that will themselves be equally transformative. In many ways, the new normal economy is spurring adoption of these new tools and approaches, because they help companies achieve greater flexibility at lower costs. Quite possibly everything required for transformational change in how our industry operates is now in place.

All the components - clouds, integrated solutions, smart devices and mobile technologies - are present, inexpensive and reliable. This was not possible just a few short years ago. Today, if an organization has the vision to automate to extraordinary levels, everything they need is available in what is being termed the post-PC era. The following chart outlines the ten main drivers in real estate and facilities. Each will be discussed in greater detail within the document.

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1. **IWMS Systems: Phase II**

Integrated Workplace Management Systems (IWMS) are beginning to be viewed differently. For years, we recognized that there were a number of different automated business solutions that were effective, but disconnected. IWMS systems meet the basic business functional needs, despite the fact that there was additional functional data critical to other business processes that went unused.

Recently, there has been a great deal of activity from IWMS solution providers that will allow synchronization and connectivity of external disparate business systems. IWMS Systems are now being viewed by many as an aggregation platform rather than an application. The value proposition for the business executive will be that the system connects with building technology and interacts with facilities staff providing the availability of aggregated very deep, very relevant and relational data sets that will provide business insight like never before.

2. **Visualization: BIM/GIS:**

   - **BIM:** Designing buildings and facilities using data rich Building Information Modeling (BIM) is taking hold in the marketplace. It has gone beyond helping organizations manage only the “build” phase of projects to a broader use managing complete project lifecycles. This evolution led to the introduction of a Portfolio & Asset Lifecycle Management perspective to optimize the plan, build, and operate phases of real estate and facility assets. By integrating BIM and the related data that is developed with construction project management, stakeholders can now realize business value across the entire asset lifecycle and gain new efficiencies for the organization.

   - **GIS/Mapping:** The real estate industry remains on the cutting edge of using mapping and location data to serve customers, manage information and analyze trends. Other industries look to real estate for insight into where location technology will go next. Real estate is leading the way in showing us how everyone, not just GIS experts, could begin “thinking in maps” for everyday business. Today, property sites, portals and MLSs have shed their mapping training wheels and are going beyond mere points on a map to offer more advanced spatial features and interrelated geo-information. Maps have now been truly integrated into the search experience.

3. **Unified Building IP Network:**

Much has been said and written about Intelligent or Smart Buildings. For purposes of this paper we would define an intelligent building as follows: A building that uses technology and processes to reduce its environmental impact, protect occupant health and safety, improve employee productivity, and become more operationally efficient for its owners. Building controls companies have provided end-to-end building systems automating HVAC, lighting and other electro-mechanical systems for years. However, only recently - and with the introduction of open-architected, interoperable, IP-centric systems - did the idea of an intelligent building begin to be accepted into mainstream thinking.

Smart buildings are moving from innovator to mainstream adoption. For business executives, this means operating real estate with more efficiency and effectiveness while lowering operating costs. An intelligent building is run by a “system of systems” that is integrated to deliver a higher level of operational efficiency and an improved set of user-interface tools than are usually found in traditional building automation. In some ways, an
intelligent building can be considered an improved automated building, incorporating more building systems and advanced functions.

4. **Sensors/Location Awareness:**

Sensors extend the concept of location awareness to the inside of our buildings. The world of embedded devices is characterized by literally hundreds of different devices that run on different protocols. Some are considered standards, other are artifacts of substantial investments in legacy systems such as security. And unlike the PCs on our desks, these legacy systems have useful economic lives on the order of 10-15 years, not 3-4 years. These devices have much intelligence and capabilities in their own right. They can tell us what they are doing, what conditions they sense, what decisions they are making, or not making. They are aware of each other and the actions that each is taking. The reality is that embedded devices can all be connected and integrated together to create an intelligent building information network whether it be a single building or in a campus environment.

5. **Mobility:**

The commercial, corporate and institutional real estate industries are very information intensive. From occupancy reports to complex financials, they have never been accused of producing too few reports. With the advent of mobile devices such as the iPad, it seems that everyone in the real estate organization, from the on-site property manager to the CEO, wants what this new electronic device provides. CIO’s have been inundated with requests to automate a variety of functions, such as inspection forms, remote access to our desktops and views of our building controls monitoring system. It became obvious that if gathering information required an individual to return to their desk to retrieve it, their business processes - and possibly your organization - would be out of date.

In a global marketplace, where companies are competing for new customers in unchartered markets, mobility can offer a valuable new channel for improving performance. Indeed, with more than five billion mobile subscribers across the globe today, mobility of communications and computing power is dramatically improving connectedness, making the world a smaller place and opening new customer service opportunities. Mobile technologies are more likely to help business over the next five years than any other technology.

6. **Consumerization:**

We define Consumerization as the migration of consumer technology -- including electronic devices, platforms, and applications – into enterprise computing environments. Consumer technology has in many instances augments staff productivity. This is especially true of the user interfaces such as touch screens and voice recognition. Staff can work in mini “slices” of time leveraging those countless moments of downtime during the day. Today, the benefits are often compromised with consumer smart phones, media tablets, and Internet applications which have been intentionally excluded by many company’s IT policies.

The expectations of a new generation of workers using these disruptive technologies are resetting the CIO agenda. As social media becomes a foundational component of work life and corporate collaboration, as new mobile devices and application platforms proliferate, and as more employees work from multiple locations, traditional corporate policies on
personal computer usage, data security, and application usage are quickly becoming antiquated. The result is the rapid Consumerization of IT.

7. Social Media/Collaboration:

Social media has become a global cultural phenomenon during the last decade. Whether connectivity is via ‘traditional’ internet or over a mobile device, the message is clear. Social media is, by any measure, vast and fast growing. LinkedIn is widely used for networking, connectivity and collaboration. Despite this tremendous growth, recent reports reveal a debate among executives over the business value of social media. For one-third of respondents, the use of social media to engage with customers and other communities is already an integral part of their firm’s corporate communications strategy. And over 40% of companies are using social media on occasion. Still, one-fifth of respondents report that their company is not using social media at all—and one-third of respondents consider social media irrelevant to their business. Business value or a waste of time-the jury is out.

8. Cloud Computing:

Cloud computing—the metered provisioning of business applications over the internet or a private network—is not a new phenomenon. In the new normal economy, however, cloud computing takes on a far more critical role. Faced with tightening budgets and growing competition from new global players, companies can access more powerful software tools than they can afford under traditional annual software licenses. In the cloud, companies can pay for services as needed—whether it is for several months or only a few hours. Analysts have estimated that IT professionals spend 70% of their time maintaining systems and only 30% of their time creating strategic value. The ability to access software and computing power through public and private clouds means that many firms will not need to build proprietary systems or purchase expensive hardware. This frees the IT department from legacy issues and allows it to focus on innovative ideas to create competitive advantage. In essence, cloud computing could give companies an opportunity to leapfrog over their rivals in the process.

9. Virtualization of Work:

“Untether your workforce” is the mantra from most workplace consultants. The buzzwords of flexibility and nimbleness have often been seen as the strength of smaller businesses and the weakness of bigger ones. But technology is now eroding this size distinction. By empowering the workforce and improving internal communications, previously over-hyped flexibility is becoming a reality. A majority of companies expect operations to change over the next five years by technologies that support employee productivity and facilitate a mobile-enabled workforce—these include mobile devices, cloud computing and collaborative tools. This untethering of employees allows them to work remotely while staying in easy contact with colleagues as well as internal systems.

While technology certainly enables a mobile workforce, executives must remember that the key challenges will be organizational—building trust in a virtual environment, maintaining the corporate culture and ensuring performance measurement. Meanwhile, as companies’ transition into the new normal economy, they will need to be more nimble in connecting far-
flung employees and enable virtual teaming. Tools such as wikis, group calendaring, text messaging, virtual conferencing facilities, unified communication platforms and knowledge management programs are becoming essential in helping firms improve collaboration among employees.

10. Integration of Standards

The rapid evolution of online business and services via the Internet is intensifying its impact on all aspects of the real estate business. This is especially true for USA and Europe as they recover from the financial crisis and pursue new, emerging markets. It is clearly time for the real estate community - investors, agents, lawyers, and vendors - to join together to ensure that our processes and information systems can interwork with each other. Three initiatives are core to this process:

- **OSCRE:**
  The Vision for OSCRE is to enable the real estate industry to work more effectively through the use of cost-effective, standardized and automated electronic information exchange. The Mission for OSCRE will deliver global electronic standards for exchanging real estate information and will drive standards adoption within the real estate industry by guiding and providing a platform, methodology and resources within a not for profit model."

  The harmonization of information sets for leases, sales, valuations, occupation costs, etc. will help vendors improve their software and reach to all countries. This in turn will help investors, agents, lawyers, insurers and governments improve the reliability, clarity, speed and breadth of information available. OSCRE intends to be the HTML of real estate.

- **COBie:**
  COBie (Construction Operations Building Information Exchange) is an emerging internationally recognized standard and specification developed to improve the post-construction handover process to building owner-operators. COBie is an information exchange specification for the life-cycle capture and delivery of information needed by facility managers. COBie based data can be viewed in design, construction, and maintenance software as well as in simple spreadsheets. This versatility allows COBie to be used on all projects regardless of size and technological sophistication. Many government and commercial building owners (in addition to requiring BIM based deliverables) are now asking that BIM models be delivered with "intelligent objects" that enable COBie based information exchanges.

  COBIE can have a major impact on facilities managers for whom product warranty terms, preventive maintenance requirements, equipment design, spare parts suppliers, and specific parts inventories aren’t known and easily accessible. COBIE organizes related information in a logical sequence, along with processes about who does what, when-and does it all with an open standards approach to defining that data.

- **FASB/IASB:**
  In what must be considered a historic initiative, within the next year, the International Accounting Standards Board (IASB) and the U.S. Financial Accounting Standards Board (FASB) expect to release their amended lease accounting rules and set forth a date at which time all companies will be required to report their leases – real estate and
equipment – as assets on their balance sheets. This will have a profound and lasting effect on the real estate strategies and processes of global companies.

Summary: How do we apply this to our real estate & facilities world?

The objective in all of this discussion is to outline how to apply and make efficient use of these technological components. Erik Jaspers, CTO of Planon, discusses this in his chapter entitled: *Technology and the Future of Facilities* in the workplace in the recent IFMA publication: *Work On The Move: Driving Strategy And Change In The Workplace*. Our vision is to move to the smart & connected building which in turn is connected to the smart, & connected planet. And, while we discussed these technology tools separately in this document, they rarely if ever exist in the market in that form. Let’s explore some known use cases and case studies:

- **Case Study #1: Global telecommunications company:**
  A Unified IP Network has been installed in 10 buildings as a pilot study. These are retro-fitted buildings, not new construction. 25% of the floors have had infra-red sensors installed to measure movement, occupancy, humidity and temperature. There are direct links to building controls that adjust the environment accordingly. An underlying IWMS provides asset and space information.

- **Case Study #2: Global Financial Services company**
  Sensors have been linked to the room reservations system covering conference rooms, touchdown space and hoteling environments. No show and use patterns are recorded with real time availability being provided to the reservations environment. All information exposed via mobile applications, kiosks and digital signage for use in way finding, room availability and location information of team members. An underlying Space Management provides space information.

- **Case Study #3: Regional Healthcare System**
  This organization represents a regional portfolio of 6 healthcare facilities and over 8m sq ft. BIM technology was used in a $84m patient care addition for one facility. Historical experience had benchmarked change orders at 12% of final costs. BIM design concepts were employed during the design phase. Numerous multi-disciplinary design conflicts were revealed as interference studies were conducted. Final change orders reflected 4% of final cost representing an 8% savings or $6.7m. Digital data collected for building components was conveyed at the time of commissioning for facility management purposes. iPads & iPhones collected field conditions during construction.

- **Case Study #4: National Insurance & Financial Services company**
  Client internal staff was charged with producing lightweight productivity applications for mobile devices, primarily iPads, iPhones and Android devices. Using toolsets such as the Google Apps environment, inspection forms, customer request forms and drawings using Sketch It were deployed. These apps were designed to fill in the gaps around enterprise ERP, CRM and department level point solutions. Selected portfolio and asset data sets were deployed via a web form (Square footage, lease information, operating costs etc..). HTML code was employed to present the data to users via Google Maps and available to all via mobile devices. An underlying IWMS system provides the portfolio data.
Planon software is used by some of the world’s largest and leading organizations around the world. Planon’s enterprise-class solution is built to address the business challenges faced by organizations and provide the most comprehensive Integrated Workplace Management System on the market today. The Planon series of solutions include:

**Space and Workplace Management**
With Planon, organizations can more effectively manage valuable real estate assets through the use of space management, reservation management, move management, hoteling and security. Planon provides employee self-service, more effective move management, space chargeback processes and integrated CAD tools to improve overall facility effectiveness.

**Maintenance Management**
Planon’s maintenance management solution helps companies better manage capital assets and streamline operational efficiencies. Planon provides self-service and automated routing capabilities to improve the effectiveness and efficiency of preventive and corrective maintenance, while giving organizations the tools to more effectively evaluate investments in capital assets.

**Real Estate Management**
With Planon’s real estate management solution, organizations can maximize the performance of their real estate assets. Planon offers a unified solution to automate and manage your portfolio, transactions, leases while giving you the tools you require to increase revenues and reduce costs through more efficiently managing your business.

**Integrated Services Management**
Planon’s integrated services management solution gives organizations the tools they need to more effectively manage services and delivery from start to finish -- on time and on budget. By integrating cost, schedules and scope in one seamless solution, Planon helps you increase workplace productivity, reduce costs and increase overall employee satisfaction.

This paper was commissioned by Planon Corporation
Planon is a global software provider that enables organizations to solve their Facility Management and Corporate Real Estate challenges in the most effective way by providing superior software solutions and excellent customer service. The Planon series of solutions include Space and Workplace Management, Maintenance Management, Integrated Services Management and Real Estate Management. Founded in 1982, Planon has more than 1,800 clients in 40 countries and offices in the U.K., the U.S., Canada, the Netherlands, France, Belgium, Germany, Austria, Singapore and India.

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