

white paper

**Corporate Infrastructure:
Emerging Trends in Infrastructure
Management Technology**

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L U M I N A N T
WORLDWIDE

Contents

I. Introduction	3
II. Challenge	5
II. Solution	6
Point Solutions	6
Connectivity	7
Process Automation	7
The Web	8
II. Benefits	9
II. Conclusion	10
About the Author	11
About Luminant Worldwide	11

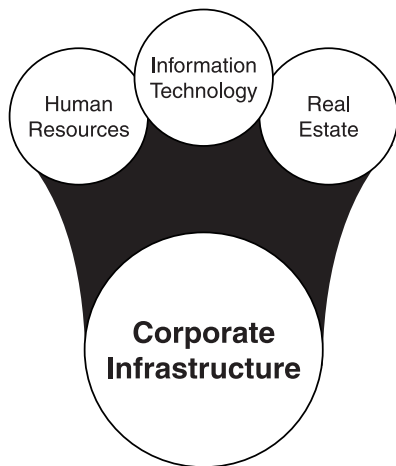
I. Introduction

Businesses are experiencing radical change. In his book “Business at the Speed of Thought,” Bill Gates notes this is due to “ a disarmingly simple idea: the flow of digital information.”¹ The change is fundamental and pervasive throughout organizations. This has lately become evident in the area of business-to-consumers and business-to-business. We are now seeing it in the area of internal services - infrastructure management.

In the past, corporate support groups - such as real estate, H/R, and IT - have used technology to monitor their basic operations (i.e. to track leases, cut paychecks or control inventory). However, this type of technology has primarily been used to automate old, manual processes. A paradigm shift occurs when companies use digital technology to facilitate new, and/or refine existing, processes to fundamentally improve how they function and to enhance their ability to compete in today’s dynamic business climate.

What is Corporate Infrastructure?

In 1998, the International Development Research Council (IDRC) Foundation published a research bulletin entitled *Corporate Infrastructure Resource Management: An Emerging Source of Competitive Advantage*². This landmark initiative, originally addressed to corporate real estate executives, defined Corporate Infrastructure (CI) as “The integrated management of non-core functions . . . to reduce costs and create more value for the corporation.”³



Since its introduction, this initiative has gained national recognition in other publications such as ExecutiveEdge⁴, where the author advises Chief Information Officers that “The ‘I’ in CIO stands for *Infrastructure*.” On June 20, 1999, the *New York Times* printed an in-depth report which profiled the IDRC initiative, stating that “the new ideal is to be a ground-level force for better morale, lower costs and higher productivity.”⁵

The concept of managing all corporate assets as a strategic component of the overall business strategy is a shift in thinking rapidly catching on. Sometimes called Infrastructure Management (IM), or Infrastructure Resource Planning (IRP), the concept involves an integrated approach to the management of all assets not directly involved in a company’s core business. Thus, real estate and facilities management clearly fall into this classification. So do Information Technology (IT), human resource management, most procurement activities, cable management, fleet management, and many more.

¹ Bill Gates. *Business at the Speed of Thought*. New York: Warner Books, Inc, 1999, pg. xiii

² *Corporate Infrastructure Resource Management: An Emerging Source of Competitive Advantage* Research Bulletin No. 22. Norcross, Georgia: The IDRC Foundation, 1998.

³ IDRC Bulletin No. 22, page 13

⁴ Jeffrey Rothfech, “ExecutiveEdge”, Volume 1, Number 3. April-May, 1999: GartnerGroup and Forbes

⁵ Julia Flaherty, *New York Times* Business Section, June 20, 1999

Why is this important?

In today's business climate, managers of these individual infrastructure areas are under tremendous pressure to ensure that the physical assets of a company provide value to the organization's core business above and beyond their historical roles. At the same time, management is expecting proven economic and performance benefits for their investments. To do this, support organizations, whether integrated or independent in their organizational model, must address the ever-increasing demand for acquiring, assimilating, and providing ready access to the rapidly increasing knowledge base associated with the areas under their influence. As anyone in the asset management business can attest, this need has driven the rush to automate basic operations. Numerous focused "Point Solutions" were introduced to the market to address these specific operational needs. However, this has resulted in a proliferation of incompatible systems. Each system may operate smoothly independently, but the data in each is isolated. Extracting data from these "islands of information" and using it in a meaningful way has become one of the more frustrating problems of infrastructure management.

As a result, to be truly competitive in today's world, infrastructure management groups must:

- Eliminate "chasing down" information
- Streamline the information flow between departments
- Eliminate bad decisions, reduce lost items and "human error" wherever possible
- Eliminate manual procedures wherever possible
- Reduce costs
- Increase flexibility
- Limit legal liability
- Provide an easy way to obtain and share *actionable* information
- Incorporate infrastructure management into the corporate business planning process (versus the common practice of informing support organizations after a decision is made)
- Enable customization of assets (physical and informational)

II. Challenge

The challenge to be competitive has historically been somewhat overwhelming because the information technology needed to meet the requirements outlined above has not been generally available in an affordable and integrated form. There have been some efforts to realize this type of solution, such as Computer Aided/Integrated Facility Management (CAFM/CIFM) systems for facilities management, but these types of systems are only part of the answer. The setback of the majority of these CI tools is they have been developed and used for speeding up manual, tactical services.

These systems are critical components of a successfully integrated CI solution. However, today's corporate infrastructure managers are demanding new digital tools that deliver immediate access to actionable information. This strategic information must be collected and stored in such a way as to build true institutional knowledge. It must then provide the spontaneity and accessibility to knowledge, which allows the manager to deliver timely and accurate services within today's high-speed corporate environment.

III. Solution

The Second Generation Intranet

Digital technology for creating Corporate Infrastructure solutions has reached an inflection point – the moment at which change in underlying business operations is sudden and extensive. Not a single tool, but a logical utilization of a number of technologies – defined below in four distinct tiers – has created an opportunity to radically transform the way infrastructure support is provided within your business. Together, these technologies create a flexible solution set that will provide definite strategic advantages to your CI services.

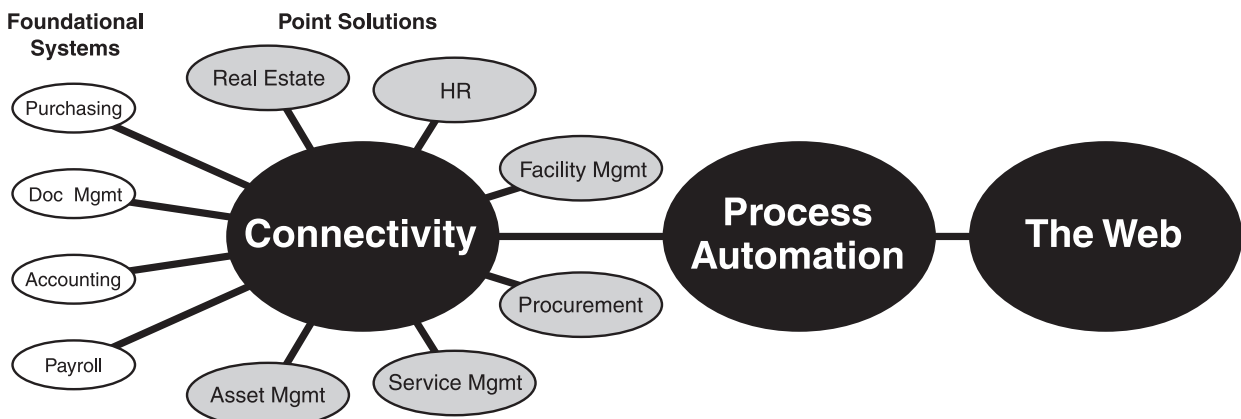
The four tiers of technology which comprise a CI Solution are:

Point Solutions

These systems focus on collecting, collating, and disseminating critical, but specialized, information for specific tactical services. In the context of CI, some technical tools commonly used for this include:

- Computerized Maintenance Management Systems (CMMS)
- Computer Assisted/Integrated Facilities Management (CAFM/CIFM)
- Lease administration
- Asset management (IT desktop)
- Service management (Help Desk)
- Procurement
- Capital budgeting/planning
- Personnel management (H/R)
- Project management

These point solutions are critical to successful implementation of any fully integrated CI solution, and are the foundation for ordering operational information. However, these systems only track and report operational information for discrete service areas. They do not typically share information between themselves and can not control the processes on which they are dependent.



Connectivity

This technology tool set creates a dynamic and real-time ability to share information and collaborate among team members. It incorporates data integration, which ties the various point solutions together so they can act as one. It also is used to build bridges to critical corporate information found in the various discrete *foundational* systems of the corporation such as accounting, document management, payroll, manufacturing, etc.

However, connectivity tools can do much more than just integrate data sources. Today we can utilize event-based, Publish-and-Subscribe technology to create integration that can provide real-time notification to other systems of critical information and even kick-off other events. Publish-and-Subscribe enables a company to extract data in a way that is both reliable and definable. As soon as changes are confirmed to one of the foundational or point solutions mentioned above, the system “publishes” the changes to a network server. The technology then pushes the information automatically to the desktop computers of the people for whom the CI solution has defined a need, or for anyone who has requested the information. The Publish-and-Subscribe technology can also forward events to the workstations of specified recipients, including vendors or suppliers outside the company who have access to your company’s Extranet. No one – not managers, consultants, executives, technicians, buyers or suppliers - needs to monitor a database or Internet for any changes that might affect them. This capability enables real-time alerts to the right people regardless of the original source of the information and it removes most of the waiting time – not to mention risks – found in traditional data feeds, downloading or data merging routines.

Process Automation

Also known as Workflow Automation, this is an under utilized technology, which is an integral part of value-based service delivery and performance measurement. This technology leverages expertise and information to improve organizational productivity, responsiveness, competence and innovation. The key aspect of this technology is that it allows you to build and manage best-of-class, information-rich processes. These processes become a documented baseline where future changes to the process can be tested for a measurable performance impact.

The reason this technology has such a major impact on service performance is simple. Most companies have an inefficient chain of manual paper processes that create a barrier between customers and the people who must address their needs. Process innovation should be the fundamental source of competitive advantage for almost every organization. This is often misinterpreted as being synonymous with re-engineering. Re-engineering is the act of analyzing and changing processes with the goal of improving them in some way. Although many processes may need to be re-engineered, Process Automation is simply a technology that allows the automation of a business process to take place.

Thus, Process Automation technology adds a significant advantage to every process regardless of whether it needs to be changed or not. You can automate the process as is, improve the functionality or streamline the workflow, or even create new best-of-class processes. Regardless of which situation is the ultimate reality, the use of this tool is more efficient than “reinvent the wheel” each time they perform an activity.

Another important advantage of Process Automation, when linked with the fourth tier, the Web, is automation of redundant or administrative tasks. This technology enables self-service of almost all administrative activities allowing the CI staff to spend more of their energy on strategic issues. Employees are able to submit work requests for routine maintenance without talking to the maintenance department. Employees can change the beneficiary on their

insurance or request business cards without talking to H/R. Literally hundreds of manual tasks, which tie up hours of support staff time, can be handled electronically.

Some of the advantages of Process Automation include:

- Handling routine tasks to eliminate wasted time and energy
- Freeing people to do more difficult work and handle exceptions instead of the routine
- Reducing trial-and-error processes and building up best practices
- Building on previous work (best-known methods) instead of starting over every time
- Capturing and converting customer feedback into improvements quickly
- Creating a method for standardized incident management and analysis
- Streamlining administrative activities which are complicated and/or time-intensive
- Utilizing electronic forms and email to eliminate manual “paper and people” processes where data is eventually entered into a computer anyway
- Providing online, content-sensitive help that contains summaries and details about a form or report as well as to answers to Frequent Asked Questions (FAQ's)
- Creating a digital feedback loop to improve the efficiency of physical processes and improve the quality of the services provided
- Easily tracking all key metrics
- Routing user complaints immediately to the people who can improve service

Process Automation replaces paper processes with collaborative digital processes, reducing 20% to 90% of the time needed for CI activities, such as move-add-change (MAC), employee reviews, capital budgeting and other operational processes.

The Web

A fundamental new rule of business is that the Internet changes everything. Although this trend has become apparent in many business-to-consumer activities, its impact on business-to-business activities as well as the services provided internal to an organization, those classified as Corporate Infrastructure, is now undeniable.

Regardless of how successfully you implement the first three tiers, your knowledge base is of no value unless all the players can access the information easily. Properly designed and implemented, the Web can provide secure, easy access to all information in an organization's integrated solution, while leveraging best-of-class processes for managing service and assets. This technology is the most significant advance in usability in many years.

When designed to fully address an organization's needs, a Web site can become the primary user interface for all corporate services. When this happens for a particular class or group of individuals, it is called a portal site. The technology exists to develop a *Virtual Service Portal* for all administrative and support functions within a company. This technology allows for:

- Simplicity in use, reducing, or even eliminating training
- Quick implementation
- Fun, consistent, easy-to-use, “seductive” interfaces
- Critical corporate knowledge is easily accessible thus gaining more participants
- Low support costs
- Global access to all services
- No training costs
- Focused functionality
- Scalable, extensible platform on which to build other business solutions

III. Benefits

The benefit of a second generation intranet is that it ensures the relevance, timeliness and usefulness of an organization's intranet by redistributing the ability to manage the content of the intranet from technical personnel to the owners of critical corporate knowledge.

The positive ramifications of this architecture are numerous and include:

- Critical corporate knowledge is captured at its source and distributed instantly.
- IT is no longer burdened with content responsibilities and no longer runs the risk of becoming a content bottleneck.
- Because it's accessible and easy to use, the intranet earns more participants.
- Because it is easy to update and has more participants, the intranet becomes more timely, accurate and relevant.
- Once the IntrAlign architecture is in place, organizations have a scalable, extensible platform on which to build other business systems.

IV. Conclusion

Bill Gates builds a convincing argument in his book for making digital information flow pervasive throughout your organization. There are three fundamental business shifts he notes will occur as the result of new technology such as those outlined above:

- Most transactions will become self-service digital transactions
- Customer service will become the primary value-added function in every business
- The first two points will drive companies to adopt digital processes internally even if they don't adopt them for efficiency reasons.⁶

This is as true for CI activities as it is for the organization as a whole. The CI solution set assists organization's in addressing fundamental business issues and developing a long-term business strategy for solving problems and taking advantage of opportunities. It is critical to communicate effectively with your users, (your customers) and act on what is learned by bringing all of your processes to bear on the services you provide.

The bottom line in Corporate Infrastructure, as outlined by IDRC, is to forge an alliance between the critical resource management groups within an organization not only to reduce overhead, but also to create an integrated infrastructure response to market conditions and competitive change. The technology described in this paper allows an organization to create integrated processes across departmental boundaries to meet their goals. It provides a means for building institutional intelligence and for providing a unified ability to act on that intelligence. This type of "integrated" solution provides any CI organization with a method to easily deploy business applications across Intranets and Extranets. It also allows for a logical and cost-effective implementation phasing. With this type of solution configuration, definitions of all data are clearly understood; duplication of information is avoided; both structured and non-structured data are integrated; information from legacy/foundational systems can be incorporated; and accurate information is available on demand at any time.

The result is an enterprise-wide implementation that provides significant value through improved resource management, increased productivity, lower operating expenses, and a proactive approach to corporate asset oversight. When knowledgeable workers are relieved of the distraction and burden of routine tasks, they:

- Work faster and more effectively
- Work in groups easily, quickly and with the insights of an entire team
- Have access to a new level of electronic-based intelligence

The real advantage of this type of technology integration is the accuracy, immediacy, and richness of the information it brings to knowledgeable workers. The ability to create and maintain a flexible infrastructure requires a streamlined and well-managed process flow between the various support departments, as well as timely access to critical actionable information. The technology discussed in this document was developed with this goal in mind.

⁶ Bill Gates. *Business at the Speed of Thought*. New York: Warner Books, Inc, 1999, pg. 67

About the Author

Philip Wales is a Principal with Luminant Worldwide Corp. and is responsible for the company's Corporate Infrastructure solution practice. He has 21 years of experience, garnering a national reputation as a visionary leader in applying creative solutions to complex business problems. Whether in real estate, infrastructure management, or applied information technologies, Mr. Wales has helped numerous clients identify strategic opportunities and implement creative business solutions. Mr. Wales graduated from Texas A&M University and holds Bachelor degrees in Science and Environmental Design as well as a Masters of Architecture.

About Luminant Worldwide Corp.

Luminant Worldwide Corporation is a leading provider of Internet and electronic commerce professional services to Fortune 1000 companies and Internet-based companies. The company focuses on enabling businesses to develop and expand Internet and electronic commerce business models. Through its integrated practice areas, Luminant specializes in providing strategy consulting, creative solutions, technology solutions and value-added services for more than 100 clients in a diverse range of industries.

Based in Dallas, TX, Luminant has principal locations in Houston, TX, Larchmont, NY, New York, NY, Reston, VA, Atlanta, GA, San Francisco, CA and Seattle, WA. The company's 720 employees are located in 17 states throughout the US. These former companies were acquired by Luminant in 1999: Align Solutions Corp., Brand Dialogue New York, Free Range Media, Inc., Integrated Consulting, Inc. (known as i.con interactive), InterActive8 Inc., Multimedia Resources, LLC, Potomac Partners Management Consulting, LLC and RSI Group, Inc.

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