Digital literacy: Taking the first step toward digital competency in corporate real estate

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**ABSTRACT**

Speaking the language of digital real estate is a much-needed skill for CRE leaders, their people and their business partners. Digital literacy helps CRE leaders become more effective communicators and drivers of change as the industry shifts to digital at an increasing pace. This paper introduces terms, concepts and techniques to better equip CRE leaders for the opportunities and challenges ahead. This work is related to a programme focused on ‘digital competency in real estate’ developed by OSCRE International, a leading real estate data standards group. The purpose of the initiative is to: 1) interpret trends in the industry; 2) demystify the language of digital; 3) identify skills that CRE leaders and their teams need now to succeed in a digital world; 4) better understand how to approach change; 5) provide pragmatic guidance on how to prepare for and make the changes needed. Highlights of the findings of this initiative include: 1) digital literacy is a core competency like any other; 2) effective collaboration between IT and the business depends on it; 3) building a data strategy is high on CRE leaders’ priority list; 4) increasing pressure for data quality means better data governance; 5) data integration is vital, but the role of the integrator is still in flux; 6) data management is becoming much more visible in outsourcing contracts; 7) service providers are developing new services and tools to compete in new ways; 8) emerging technologies, such as machine learning, are becoming more mainstream; 9) the emerging workforce is already digitally enabled and brings new skills and expectations; 10) starting with the language will help CRE leaders get ahead of the changes already underway.

**Keywords:** digital literacy, digital competency, data strategy, data integration, data management, data modelling

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INTRODUCTION

Corporate real estate (CRE) is already on the move towards becoming more information-rich and data-centric. With increased outsourcing and information coming from multiple sources, CRE executives face a significant challenge in deciding whether to be the integrator or not. Additionally, whether real estate is core to the business or not, there is an increasing demand for better business intelligence and analytics, better data quality, and higher levels of trust in the data used to make real estate decisions.

The move towards digital CRE has been in innovation mode for quite some time. It is now reaching a state where companies are shifting their entire CRE strategy and operating practices to be more digital. It is not about whether it is going to happen, it is how quickly it will become business as usual. The most important question is whether we are willing to make the changes needed to become truly digital. Becoming digital will involve transformation of one kind or another, including the skills and capabilities in the CRE organisation itself.

But first things first. We need to be able to speak the digital language and build literacy around digital trends, new strategies, and the changes needed to build digital competency in CRE.

This paper is the result of a year-long assessment of trends and emerging practices for building digital competency in CRE. It is not intended to be a prescriptive guide on how to build digital competency. There are many paths you can take and some of the lessons outlined here will work for you, while others may not. The primary purpose of this paper is to raise the level of digital literacy for CRE leaders and their teams. This means introducing the language and the building blocks for digital strategies and practices in CRE. It also sets out to equip individuals, teams and the extended enterprise with a way to better understand what competencies they need to build a digital future and why.

WHAT IS DIGITAL COMPETENCY?

Digital competency can be defined as building digital knowledge, skills and the abilities in individuals, teams and the whole organisation. It is also focused on strategies, awareness, collaboration, creating content, and thinking and acting flexibly and creatively as an organisation.

Becoming digital calls for building capabilities in five areas (see Figure 1). It starts with a better alignment with customers, getting relevant language in place and collaborating with stakeholders. The collaboration between IT and the business, and with internal and external business partners, is also critical to any digital initiative or transformation. While the middle stack in Figure 1 may seem focused primarily on technology, literacy has a significant role there too. This is also where a solid strategic and operational foundation is built with a data strategy, a data model and data management practices. From there, the two remaining core competencies focus on execution, in areas such as outsourcing, vendor integration, data governance and change leadership.

WHY IS DIGITAL LITERACY SO IMPORTANT?

CRE is becoming more digital at an increasing pace. We are no longer focused on just property and real estate. Most CRE organisations and their business partners are good at relationship management. They are
precise and accurate in execution and bring insight from years of experience. Yet decisions need to be based on information, not just on experience.

Data literacy helps us know how and when to implement digital technologies and techniques. Examples of digital literacy in CRE include:

- Knowing what data is appropriate to use for a particular purpose, such as portfolio optimisation;
- Interpreting data visualisations showing the rationale behind portfolio strategies and decisions;
- Thinking critically about information yielded by data analysis;
- Understanding data analytics tools and methods and when and where to use them;
- Recognising when data is being misrepresented or used in a misleading manner;
- Communicating information about data to people in multiple functions and roles.

For CRE leaders to start some form of digital innovation, they can expect to be working in technology, data and information. Digital literacy is a new language that CRE leaders, their team members, stakeholders and service partners need to learn to speak. It cannot just be the expertise and responsibility of a small group. It is becoming the responsibility across the whole organisation, which has to be able to converse in this new language and use this skill to help drive change.

CRE’s role with data is also changing. CRE is quickly becoming a producer of data and will begin to interact very differently with stakeholders across the organisation as they become consumers of the information and insight CRE provides. As a result, there is a significant people side to digital literacy. Once you start advocating digital literacy, and working towards a common terminology and common definitions of the key metrics that drive the organisation, you start to gain alignment. This leads
to improvements in data governance and data accuracy, and a better understanding of insights used to drive better decisions.

THE DIGITAL LEXICON
Digital competency is a big topic. Since this paper is focused on digital literacy, it makes sense to introduce a few of the central terms and concepts, starting with terms associated with transformation. Additional terms are interspersed throughout the paper.

• **Digital transformation**: The integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. It is also a cultural change that requires organisations to continually challenge the status quo, experiment, and get comfortable with failure;

• **Digital operational excellence (DOX)**: A critical imperative in digital transformation, replacing traditional thinking around organisation efficiency. Three key elements underpin DOX: agility, customer-driven innovation, and orchestrating internal and external capabilities;

• **Interoperability**: A critical component of integration. It describes the extent to which systems and devices can exchange data and interpret that shared data. Interoperability is the ability of different information technology systems and software applications to communicate, exchange data and use the information that has been exchanged. It is the ability of information systems to work together within and across organisational boundaries;

• **Master data management**: A technology-enabled discipline in which business and IT work together to ensure the uniformity, accuracy, stewardship, semantic consistency and accountability of the enterprise’s official shared master data assets. Master data is the consistent and uniform set of identifiers and extended attributes that describes the core entities of the enterprise such as customers, suppliers, sites, hierarchies and chart of accounts.

INDIVIDUALS, TEAMS AND THE EXTENDED ENTERPRISE
It helps to look at competencies at three levels: individuals, teams and whole organisations. Competencies at the individual level can be achieved by: 1) raising the understanding and skills of the existing workforce; and 2) by harnessing the greater comfort and awareness of data and technology among those entering the workforce now and in the near future. The primary reason to focus on teams is to improve the working relationship between the business and IT. This collaboration is a serious problem when it is not working well. When it is working well, this collaboration provides a critical building block in digital competency. Building competency at the enterprise level extends out to business partners that are increasingly responsible for generating and managing the data that CRE leaders need to be effective.

FOCUS ON THE CUSTOMER AND STAKEHOLDER PERSPECTIVES
Commentators and researchers following the growth of digital competency identify customer focus as the key driver for digital transformation. CRE is already very customer-driven. Carefully consider the perspective of customers and other CRE data stakeholders when planning changes to operating digitally. Focus on the benefits to the customers, not the features of the technology.

A CRE data stakeholder is an individual or group that could affect or be affected by CRE’s data, including business leaders, data stewards, IT teams and data architects, as
well as less obvious ones for a given decision or situation. They come from across the organisation, and include groups who create data, those who use data, and those who set rules and requirements for data. Some will expect to be included in data-related decisions. Some will be expected to be consulted before decisions are formalised and others will be satisfied to be informed of decisions after they are made.

Often, a subset of executive stakeholders will form a Data Governance Board to provide oversight, develop policies and resolve issues. Other times, governance oversight is provided by an existing organisational body, such as an IT steering committee or an executive team. Figure 2 shows some examples of the perspectives of CRE stakeholders.

BUILDING BUSINESS ANALYSIS SKILLS
The rise in demand for better analytics is one of the primary reasons for building digital competencies. CRE organisations are retooling their staff and collaborating better with IT to add business analysis skills, such as:

- **Communication skills** for interacting with users, clients, management and software developers. A project’s success may depend upon clearly communicating details such as project requirements, requested changes and testing results throughout the project;
- **Technical skills** to understand existing technology applications, outcomes possible from current platforms and the latest technology. Skills include testing software, designing business systems and having a strong technical aptitude;
- **Analytical skills** so that business needs are properly interpreted and translated into an application and operational requirements. Analyse data, documents, user input surveys and workflow to correct business problems;
- **Problem solving skills** to create workable solutions to business problems.
When developing custom business solutions, nothing is predictable. Find ways to quickly resolve problems and move toward a project's successful completion;

• **Decision-making skills** with sound business knowledge: be able to assess a situation, receive input from stakeholders and select a course of action;

• **Managerial skills** to manage projects — including defining scope, directing staff, handling change requests, forecasting budgets and keeping everyone on the project within allotted time constraints. Supervising projects of all sizes, from inception to implementation — and usually concurrently;

• **Negotiation and persuasion skills** to perform as an effective liaison between developers and users, clients and companies and management and IT. Negotiation skills to develop workable solutions. Maintain relationships within an organisation and with external partners.

**LAYING THE PATH TOWARDS DIGITAL MATURITY**

One of the first things you can do to get moving down the path towards becoming more digital is to assess where you are today. A very useful starting point is to look at the current level of digital intelligence.

Digital intelligence is comprised of a set of practices that affect a company’s ability to implement a transformation of your business and operations in four critical areas: strategy, culture, organisation and capabilities.

Digital maturity emphasises two things: 1) the level of investment around technology-related initiatives; and 2) the approach to change. Digitalisation of CRE has been sitting in the innovation mode for quite some time, but it is definitely reaching a state now where CRE leaders are shifting their entire strategy and operating practices to digital. Here are some examples:

• Implementing business intelligence (BI) and advanced analytics to optimise portfolios;

• Integrating sensor data with utilisation tracking and space decisions;

• Implementing machine learning techniques to build lease abstracts;

• Deploying data governance tools to automate data quality checks as part of an integration;

• Well-defined data supply chains linking all sources and users of data;

• Data-driven customer experience, such as tenant portals.

**THE FOUNDATION FOR A CRE DIGITAL ECOSYSTEM**

In an increasingly digital world, no organisation can succeed in isolation; there will always be some form of integration and collaboration required. An emerging perspective of the extended enterprise in CRE is the digital ecosystem, which is made up of the following:

• Information-enabled network of collaborating business partners;

• Companies, people, data, processes and things connected by the shared use of digital platforms;

• Collection of flexible services that can be shifted and quickly adapted;

• Distributed network that allows emerging technologies to exist as components of an ecosystem;

• An open approach to innovation — key to high performance, learning from experiments;

• Willingness to openly share knowledge with others;

• Enables interaction with customers, partners and even competitors;

• Includes innovation and cooperative networks;

• Calls for enhanced speed of technology adoption and implementation;
• Can take the form of a ‘hub and spoke’ or a ‘matrix’ of relationships and information flows.

WHERE DO DATA INTEGRATION AND AGGREGATION FIT?
Data integration involves acquiring, organising, analysing and delivering data. In the last few years, many of the large global service providers have invested heavily in systems, tools, new services and data management as a differentiator. Yet, they are still finding that some form of integration is needed with other firms and platforms especially for large global, multi-service accounts.

Similarly, from the corporate real estate technology perspective, acquiring data is all about extending the data architecture beyond traditional methods to where there’s more and more use of cloud-based data. This means pulling in more external data sources increasing the complexity of integration.

This means that there is going to be increased demand for various levels of reporting and output and operational datasets, both distributed and centralised. The sheer volume of the data will force holistic thinking by CRE leaders when it comes to interfacing with the big datasets and streaming data that is coming our way. This means CRE will have to handle and manage data much differently than with more traditional lower volume sources. The shift will be to employ multiple data stores across the cloud as well as on-premise applications and services.

Trends relating to data integration and aggregation in CRE include:

• Increasing demand for more, better and faster information;
• Increasing demand for greater transparency;
• Increasingly automated integration;
• More ‘Aggregation-as-a-Service’ companies;
• Moving away from proprietary formats and platforms;
• Emerging focus on a real estate data model vs master data management at the enterprise level;
• Increasing number of integrations using middleware and application programming interface (API) connectors linking major software vendors;
• Rising acceptance of increased value from intelligent buildings by investors;
• The integrator role is in flux;
• Increased attention to the information supply chain;
• Accelerating innovation in the use of emerging technologies;
• Challenges in how organisations continuously/rapidly adopt/implement new technologies.

SIGNIFICANCE OF THE ROLE OF THE INTEGRATOR
Much has been learned about how to implement and manage outsourcing well and most CRE organisations have become very good at it. But the service offerings of service firms are constantly evolving as they continue to compete in new ways. This, in turn, puts a lot of pressure on CRE leaders and their teams to stay in touch with the market and to get ahead of it wherever possible. This means continuing to evolve the capabilities of CRE teams to be able to make the right choices on the scope of outsourcing and how best to manage it. This includes a basic strategic decision on who fills the integrator role and how that role is executed.

A CRE executive has to determine what the integration strategy is going to be. There are two basic options (and possibly hybrids), including:

1. Let your global service provider be the integrator — most major service firms are positioning to deliver that role; or
(2) Be the integrator yourself — that could mean a significant shift in the focus, role and capabilities of the CRE organisation.

But what are we integrating? Data, systems, services, roles, processes and more — all critical building blocks of an effective digital CRE organisation. From a digital competency perspective, the integrator role involves:

- An enterprise-level data strategy and data model;
- Building a central repository for data from multiple sources;
- A mechanism to exchange data in a standardised approach;
- Data management protocols and contracts for operational data, eg leases and service requests;
- Data governance practices — internal and in collaboration with business partners.

As service providers increasingly fill the integrator role, data governance, data integration, data management and data protection have to be in place to build a data-driven CRE organisation in partnership with service providers.

LOOKING AT CURRENT SYSTEMS AND DATA MANAGEMENT

When going digital, a complicating factor is the current state of the CRE systems and data environment (see Figure 3). CRE may draw from dozens of different tools or applications on a global basis. Each may still have an important role, but it can be very challenging to try to pull them all together in a way that the data is usable, integrated and aligned. To integrate data, many CRE organisations typically bring it all into a single source by building something themselves or acquiring software to do the job.

Most CRE leaders have been through at least one major systems project in their career. As technologies evolve and the demand for better analytics rises, so does the need for greater skill and expertise in-house to effectively represent CRE’s interests when it comes to data and technology. There can be significant risk in these projects when the end user

![Figure 3 Systems and the integrator role](https://example.com/figure3.png)

*Figure 3 Systems and the integrator role*

*Source: OSCRE Academy — digital competency in real estate*
of the system lacks the basic skills to properly represent themselves in areas such as design and implementation. This is exactly why more effective collaboration between the business and IT becomes even more critical.

Integration services companies have entered the market offering integration services such as hosting and integration deployment. When looking to leverage these services, policies, procedures and standards will have to be put in place before engaging the market. It can be very difficult to try to implement these later. This means making sure that internal expectations are first aligned and then built into contracts with service providers. Data governance requirements and data standards are being built into requests for proposal (RFP) for services and technology.

From the data management standpoint, ask two important questions: 1) are we considering outsourcing to a single service partner or multiple service partners?; and 2) are we going to outsource one or more functions individually or together? The answers to these two questions will have significant impact on your information management strategy and how you actually implement data governance and data management.

IMPLEMENTING THE ASSET LIFECYCLE

Think how beneficial it would be to have information on an asset from its initial deployment, through the various stages of its life until it is sold or redeployed. With that information, you can do some very useful things that would not be possible otherwise, such as:

- Enable a smooth flow of information from the construction function to facilities management;
- Link construction information to property taxes and a more accurate definition of amortisation;
- Link leasing decisions to financial reporting and accounting;
- Make better informed decisions on whether to lease, buy or build new space;

The lifecycle view calls for a consistent structure and approach to data from one function to another. Higher levels of analytics are only possible with that lifecycle view allowing for a richer set of scenarios when making decisions.

THE IMPORTANCE OF A CRE DATA STRATEGY

A CRE data strategy will have eight basic components, starting with language, standards and a data model (see Figure 4).

The right data strategy for a CRE organisation is also dependent on whether real estate is core to the business and whether your business calls for a defensive or offensive strategy when it comes to data. Consider the examples in Figure 5.

The top part of Figure 5 shows the importance of the relationship and the alignment between data strategy and business strategy. The items below that such as data governance and master data management are what you do to execute against that strategy. The top row shows the two basic kinds of data strategy. One is a defensive strategy which tries to optimise data management or provide compliance with regulatory requirements. It may also have much more governance-oriented control in nature and maybe a single source of truth. The right side is more about being offensive and going after competitive elements, more analytics and thinking more about new approaches to conducting business and potentially multiple versions of the truth. Multiple versions of the truth do not mean contradictory versions or disagreements about the truth. It means that different interpretations can be made from data depending on the context.
• Supporting interoperability with key service line partners (real estate strategy, lease administration, facility management etc.)
• Reference architecture for real estate and links to enterprise architecture
• Consolidate multiple solutions
• Data management roles, practices and skills
• Adopt/curate Data Model (Reference, Enterprise)
• Data governance practices for real estate
• Real estate data owners
• Role of and rationale for standards (OSCRE)

Figure 4  Components of a CRE data strategy
Source: OSCRE Academy — digital competency in real estate, adapted from DXC Technology

<table>
<thead>
<tr>
<th>Defensive Data Strategy</th>
<th>Offensive Data Strategy</th>
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<tbody>
<tr>
<td><strong>Real Estate NOT Core to the Business</strong></td>
<td><strong>Real Estate CORE to the Business</strong></td>
</tr>
<tr>
<td>• Tie data strategy to non-real estate objectives, such as market entry.</td>
<td>• Create new products and services.</td>
</tr>
<tr>
<td>• Meet industry regulatory requirements.</td>
<td>• Respond rapidly to competitors and market changes.</td>
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<tr>
<td>• Align real estate data model with enterprise-wide data model.</td>
<td>• Retail market entry strategy through real estate acquisition.</td>
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<tr>
<td>• Prevent cyber attacks and data breaches through real estate.</td>
<td>• Develop analytics and digital capabilities specific to real estate.</td>
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<tr>
<td>• Cost reduction.</td>
<td>• Monetize the value of the company's data; use internal data as a product or service.</td>
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|                                          |                                                                 |
|                                          | **Portfolio optimization.**                                    |

Figure 5  CRE Data Strategies
Source: OSCRE Academy — digital competency in real estate
From an operational and data management perspective, the benefits of a CRE data strategy include:

- Speed of implementation of systems and data management;
- Reduce general operating expenses and streamline business processes;
- Rationalise multiple sources of the same data and information — internal and external;
- Leverage new sources of data;
- Improve data quality and security;
- Improve analytical capabilities;
- Meet industry regulatory requirements.

From a service offering perspective, for both CRE as a service organisation and for service providers, the benefits of a CRE data strategy include:

- Helps create new products and services;
- Respond rapidly to competitors and market changes;
- Monetise the value of the company’s data; use internal data as a product or service;
- Improve revenue from cross-selling, pricing and expanded customer base.

DATA MODELING AND IMPROVED IT-BUSINESS COLLABORATION

An enterprise-wide reference data model (RDM) for CRE is essential to maturing as a digital organisation. As with data strategy, the nature of a real estate data model depends on whether real estate is core to the business or not. For example, real estate is core to the business of a retail company, or a service provider or an owner-operator with major corporate tenants. Real estate may not be core to an insurance company’s operations.

An RDM provides a standard means by which data may be described, categorised and shared. Reference data is any kind of data that is used to categorise other data found in a database, or for relating data in a database to information beyond the boundaries of the enterprise, such as information taken from daily operations in a service provider’s systems. An RDM is used to build a critical grouping of information that represents how an organisation functions, such as what data is associated with a building or a lease. OSCRE has built a reference data model for the real estate industry. It contains a comprehensive, consolidated data model for real estate, including CRE functions like space management and portfolio reporting.

Data modelling is the perfect way for IT and the business to speak the same language and to contribute to a more effective working relationship. Data modelling focuses on use cases. A use case is a simple description of how a CRE function or process is conducted and identifies the data needed. The following are examples of CRE use cases that can be used to build a CRE data model:

- Send a lease abstract to the lease administration coordinator;
- Update a profile of all the leases in a portfolio;
- Issue a service request;
- Prepare a forecast of construction spending next year.

Most CRE data models will need to be aligned with the enterprise data model for the company as a whole. For example, a global retailer collaborated with their internal global data management team to ensure alignment between the CRE and enterprise data models, including familiar CRE items, such as properties, leases and contracts, chart of accounts for operating expenses and personnel.

THE ROLE OF EMERGING TECHNOLOGIES

As CRE technology continues to evolve, it becomes very valuable to track developments...
in the market. Digital CRE is becoming more achievable with the emergence of technologies such as machine learning and artificial intelligence. Figure 6 outlines some CRE-specific perspective on emerging technologies.

**SOLVING CHALLENGES TO GOING DIGITAL**

CRE leaders have identified five major type of challenges to becoming digital, including:

1. The data;
2. Vision and objectives;
3. Digital competencies;
4. The technology; and
5. Managing change.

Specific challenges they faced and some of the solutions they implemented are outlined in Figure 7.

**ADVANCING DIGITAL COMPETENCY IN THE CRE ORGANISATION**

It is inevitable that there will be some form of transformation involved as CRE goes digital. CRE organisations going through this kind of transformation have taken the following steps, sometimes in a different sequence or combination depending on the context but they address them at some point as they evolve. This is effectively an action plan for building digital competency.

1. Assess where you are today — including digital assets;

![Figure 6 CRE perspectives on emerging technologies](Source: OSCRE Academy — digital competency in real estate)
(2) Engage CRE stakeholders and set transformation objectives;
(3) Study technology enablers in the market, such as emerging technologies;
(4) Envision the future with a broad digital roadmap — real digital use cases help;
(5) Emphasise data strategy, data governance and the asset lifecycle;
(6) Build the business case and gain the senior management support;
(7) Identify skills gaps and construct your talent pool;
(8) Organise for innovation — start small, then go big;
(9) Shrink the change, execute with agility, tolerate failure — it provides insight;
(10) Use your digital literacy to help with the change.

CONCLUSION
CRE leaders are building momentum in their shift to becoming more digital. There are many examples of early successes, but the pace has to pick up. CRE organisations that have not yet begun to investigate going digital may find that they are exposed in areas such as data quality, effective integration with servicer providers and their ability to implement meaningful improvements in business intelligence and analytics, all the while being transparent.

The new digital language starts the conversation and helps position the CRE organisation for some of the changes ahead. Improved digital literacy also helps build a better understanding of the opportunities and benefits of digital competency and
improves the ability of IT and the business to collaborate more effectively. Since digital CRE is focused on customers and stakeholders, digital literacy helps build awareness and promotes alignment across the organisation around priorities for implementation. Hopefully this paper will help you get started.