MIS QUARTERLY EXECUTIVE

How LEGO Built the Foundations and Enterprise Capabilities for Digital Leadership

We define digital leadership as doing the right things for the strategic success of digitalization for the enterprise and its business ecosystem. Digital leadership means thinking differently about business strategy, business models, the IT function, enterprise platforms, mindsets and skill sets, and the workplace. Based on the decade-long digitalization journey and experiences of the LEGO Group, this article provides insights on building the foundations for enhancing enterprise capabilities for digital leadership. Leveraging digitalization is one of the LEGO Group's four strategic priorities and is fundamental to it being a world leader in its industry.[1,2,3,4]

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Defining Digital Leadership

McKinsey & Company has observed that while companies are rushing headlong to become more digital, executives have very diverse perspectives as what "going digital" really means.[5] These perspectives range from a focus on technology, to digital customer engagement, to new digital business models and more. The lack of clarity often results in piecemeal initiatives, missed opportunities and false starts in the digitalization of the enterprise.

The term digitalization goes beyond an organization taking advantage of digital platforms, but rather reflects the way that digital media and platforms influence the restructuring of the economy, society and culture.[6] In a corporate context, Gartner uses the term to describe the process of moving to a digital business and the use of digital technologies to change business models and value-producing opportunities. Gartner also sees digitalization as a new era for enterprise IT, in which business innovation and IT innovation are more integrated and where

1 Dorothy Leidner is the accepting senior editor for this article.
2 An earlier version of this article was 1st Place Winner 2015 Society for Information Management Academic Paper Competition. That version can be downloaded at http://dinst.dk/UserFiles/Artikler/LEGO_SIM_Digital_Leadership_Paper_-_SIM_WIN.pdf.
3 Academic authors are listed in alphabetical order.
4 We would like to thank the following senior executives at the LEGO Group who provided insights and help in writing this article: Jakob Damkilde, Conny Kalcher and Eric Wolfe. We would also like to thank Charlotte Simonsen of LEGO Corporate Communications for her thoughtful comments on the first draft of this article.
5 Dorner, K. and Edelman, D. "What 'digital' really means," McKinsey & Company, July 2015, available at http://www.mckinsey.com/industries/high-tech/our-insights/what-digital-really-means.
6 Castells, M. "The Rise of the Network Society," Wiley-Blackwell, 2009.

corporate IT switches from a legacy perspective to a digital perspective—suggesting that there is a critical need for digital leadership.[7]

Similarly, a 2015 survey of 4,800 U.S. management professionals confirmed that the keys to successful digital transformation (the North American term for digitalization) are concerned more with strategy, culture and talent development than with technology issues.[8] That survey also showed that respondents were apprehensive about whether business leaders had the capabilities to lead their organizations in a digital environment.

Clearly, there is a need for clarity on what is meant by effective digital leadership, what enterprise capabilities it requires and how the foundations of digital leadership can be built and reinforced. We define digital leadership as *"Doing the right things for the strategic success of digitalization for the enterprise and its business ecosystem."*[9] This definition reflects the difference between leadership and management highlighted by leadership scholar Warren Bennis:

very fabric of the business,[12] which means the concept of business strategy should be enlarged to include digitalization. The prevailing view of a functional-level IT strategy aligned to an enterprise's chosen business strategy but always subordinate to it needs to be replaced with an enterprise-wide digital view that reflects the fusion between digital strategy with business strategy. This view is sometimes termed "digital business strategy."[13] Furthermore, business development often occurs in collaboration with partners that leverage ecosystem platforms to co-create value around products and services.[14]

2. *Different kinds of business models*: An integrated digital business strategy and collaborative ecosystem platforms enable new digital business models for creating business value. These models often have different value propositions and different revenue-sharing modes. They often also bring together both physical and digital

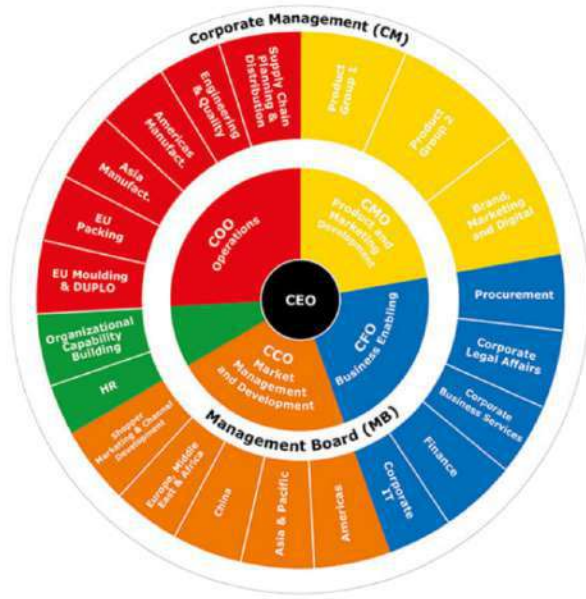
Leadership is about *doing the right thing* for the success of the organization, while management is about *doing the thing right*."[10] We have included "business ecosystem" in the definition because in today's connected world it is not possible to achieve strategic success independently of the business ecosystem.[11]

There is, as yet, no common consensus on the operational aspects of digital leadership. However, there are six foundational building blocks of strategy and organization that will have to change when implementing a successful digitalization strategy:

1. *A different kind of business strategy*: Digital technologies are becoming fused into the features of products and services.[15]
3. *A different kind of enterprise platform integration*: Intensive interactive digital connectivity to the outside requires integration between the outside and inside of the enterprise that goes beyond the traditional ERP and supply chain management integration paradigm. The upcoming era of adaptive and dynamically responsive digital platforms[16] and accompanying organizational arrangements requires a new kind of platform integration.
4. *A different kind of people mindset and skill set*: All the above will require a different mindset at all levels of the organization. Top management and all employees will need to be more adaptive and willing to experiment and innovate while occasionally failing.[17] Everyone throughout the enterprise will need to have an appropriate adaptive skill set and digital know-how.
5. *A different kind of corporate IT function*: The organizational changes required for digital leadership and a digital business strategy will require rethinking the roles of the corporate IT function and the CIO.
6. *A different kind of workplace*: As more "born digital" younger employees enter the workforce with different values, they will have different expectations of the workplace in terms of flexibility of location and working hours, sophistication of mobile online access, and the extent to which the workplace environment is "humanized."[18] Creating such a workplace as digitalization increases is especially a key priority in Scandinavia.

7 http://www.gartner.com/technology/cio/cioagenda.jsp.
8 Kane, G. C., Palmer, D., Phillips, A. N. and Kiron, D. "Is Your Business Ready for a Digital Future," *MIT Sloan Management Review*, Summer 2015.
9 There are different levels of ambition in defining digitalization. Most commonly, it is viewed as the process of transforming the structure, processes, people skills and culture of the entire organization so it can use digital technologies to create and offer products, services and experiences that customers, employees and partners find valuable. At LEGO, the definition is more ambitious and goes beyond enhancing current processes and services, and is about doing new things through digitalization that could not be done before.
10 Bennis, W. *On Becoming a Leader*, Addison-Wesley, 1989.
11 Iansiti, M. and Levien, R. "Strategy as Ecology," *Harvard Business Review*, March 2004.
12 El Sawy, O. A. "The 3 Faces of IS Identity: Connection, Immersion, and Fusion," *Communications of the AIS* (12), November 2003.
13 Bharadwaj, A., El Sawy, O. A., Pavlou, P. and Venkatraman, N. "Digital Business Strategy: Towards a Next Generation of Insights," *MIS Quarterly*, June 2013.
14 Keen, P. G. W. and Williams, R. O. *The Value Path: Embedding Innovation in Everyday Business When the Customer Makes the Rules*," Business Futures Press, 2012.
15 El Sawy, O. A. and Pereira, F. *Business Modeling in the Dynamic Digital Space*, Springer Books, 2012.
16 Simons, P. *The Age of the Platform*, Motion Publishing, 2011.
17 Vitalari, N. and Shaughnessy, H. *The Elastic Enterprise*, Telemachus Press, 2012.
18 For information on the "humanized" workplace, see "How to Humananize your Workplace™" on http://www.lynntaylorconsulting.com/blog/?p=32.

Figure 1: The LEGO Group Organizational Wheel



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LEGO Group Background

Founded in 1932 by Ole Kirk Kristiansen, a carpenter who made wooden toys, the LEGO Group (referred to as LEGO in the rest of the article) is a private company (still owned by the Kristiansen family) with headquarters in Billund, Denmark, and main offices in the U.S., U.K., China and Singapore. Renowned for the iconic LEGO brick, LEGO products are sold in more than 140 countries. It has more than 17,000 employees worldwide and factories in Billund, Hungary, the Czech Republic, Mexico and China. 2015 revenues were 35.8 billion Danish krone (over $5 billion). operations. Playfulness is an important element of LEGO's business and management. As LEGO

To illustrate the kinds of changes that a digitalization strategy entails, this article describes the LEGO Group's decade-long digitalization journey.

Net profit was 9.2 billion krone (over $1 billion). To date, more than 760 billion LEGO elements have been manufactured. In 2014, about two-thirds of revenues were from new products that did not exist the year before.

The company is committed to the development of children and aims to inspire and develop the "builders of tomorrow" through creative play and learning. The company's main goal is to *"inspire and develop children to think creatively, reason systematically and exploit their potential to create their own future and thus exploit man's infinite possibilities."*

Organizational Structure

LEGO depicts its organizational structure as a "wheel" (see Figure 1). This structure reduces silos and emphasizes communication and sharing of knowledge and insights as well as making decisions in plenary groups. In addition to an external Board of Directors, top management consists of a Management Board of the CEO and four Executive VPs, and a Corporate Management team of 21 people at Senior VP level.[19] The four core business areas—Operations, Market Management and Development, Product and Marketing Development, and Business Enabling—are represented in the Management Board. The CIO, who is the Senior VP for Corporate IT, is part of the Business Enabling area covering group/corporate functions. As Figure 1 depicts, members of the Management Board and the Corporate Management team comprising the wheel run the company, and they often communicate across areas as part of the transparent communication culture. They also all meet together regularly.

Values and Culture

The LEGO culture is based on openness and trust, and core values are creativity, imagination, fun, learning, quality and care.[20] Since the company was founded, LEGO's top managers have consistently expressed concern for maintaining the values and beliefs for which the brand stands. The founder's motto of *"only the best is good enough"* is still applied in all aspects of LEGO's CEO Jørgen Vig Knudstorp likes to say: *"We don't stop playing because we grow old. We grow old because we stop playing."*

Near-Death Experience and the Start of the Transformation Journey

Although LEGO is now a thriving business, in the early 2000s it verged on defaulting on its debt.[21] Manufacturing was in Europe and the U.S., while competitors were manufacturing in Asia at much lower cost. The toy market had become more fickle with the advent of new electronic games. LEGO had diversified too quickly into adjacent markets: amusement parks, video games, toys for infants, clothing and others that it had little experience in. It almost seemed like the company "lost faith in the brick" and its identity as a company.

As LEGO's press officer articulated in 2014: *"We were a little bit complacent, thinking that we knew what we were doing as a company and we knew best. Second, we were not focusing much on our customers. And thirdly, there was a lack of flow of information inside the company."* A major organizational transformation and a new business strategy were needed to save what some had called a "burning platform." The starting point for the transformation was the replacement of the CEO in October 2004 when 35-year-old Jørgen Vig Knudstorp, who had initially joined LEGO as a business strategist in 2001 from McKinsey & Company, became CEO. Since 2004, LEGO has enjoyed almost a decade of consecutive growth.

The new CEO's initial focus was on survival, and he instigated a two-pronged strategy based on reducing production costs and closing non-profitable product lines, and on a clearer focus on the core brand and identity.

The emphasis in 2005-2007 was on creating a defensible core of products. Product lines that were neither profitable nor core were shut down, and the capital structure was

19 http://www.lego.com/en-us/aboutus/lego-group/management.
20 http://www.lego.com/da-dk/careers/our-culture.

21 See, for example, "LEGO CEO Jørgen Vig Knudstorp on leading through survival and growth," *Harvard Business Review*, January 2009; Robertson, D. and Breen, B. *Brick by Brick: How LEGO Rewrote the Rules of Innovation and Conquered the Global Toy Industry*, Crown Business Books, 2013; and *We Lost the Focus on the Bricks*, available at http://www.internationaltradenews.com/interviews/we_lost_the_focus_on_the_bricks.

rebalanced. LEGOLAND parks were sold to Merlin entertainment. The company downsized from 8,500 to 5,000 employees. Open communication about problems was encouraged and practiced. Refocusing on the LEGO core (the brick) was key, while also pursuing complementary digital opportunities that reinforced that focus and did not wander into adjacent markets.

In 2008, the strategy shifted from stability to growth and the focus was on building sustainable platforms for growth while continuing to improve the core business. Although the Corporate IT department had been supporting the recovery, stability and growth of the company through enterprise systems, there was a realization of the growing importance of digital platforms for the LEGO Group.

LEGO Group Strategy

The LEGO Group has a long-term corporate strategy toward 2032 consisting of four strategic priorities—one of them being "leverage digitalization" (se Figure 2). When it was establishing the strategy, LEGO decided that it would look to respond to the external adaptive challenge of digitalization by purposefully "evolving" its existing business model to integrate digital into everything it does. LEGO consciously decided that it would not have a separate digital products business unit.

Figure 2: The LEGO Strategy

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digitalization moves and learning through the experience. We describe some of these moves below.

Digitalization at the LEGO Group

LEGO used three lenses for leveraging digitalization: a "Products" lens, which centered around product innovation and the product ecosystem; a "Marketing" lens for digital marketing; and an "Enterprise" lens, which centered around enterprise platforms and integration of the outside and the inside of the enterprise. Since 2009, LEGO has undertaken several product and marketing digitalization moves, which have necessitated associated digitalization moves in the enterprise IT platforms. We describe a representative selection of all three types of moves below.

Product Digitalization Moves

The first hybrid digital/physical LEGO experience was LEGO MINDSTORMS®, launched in 1998. MINDSTORMS is a robotics platform created in collaboration with MIT's Media Lab and was targeted at an older segment. A month after its launch, LEGO discovered that the proprietary operating system had been hacked. This was a major surprise to the company, which traditionally was tightly closed, with a culture of close control over every aspect of the LEGO experience. However, LEGO realized that opening up could create a much stronger community of users and become a source of additional value. Instead of prosecuting the hackers, it talked to them and found they were LEGO fans who wanted to build their own creations. As a result, LEGO developed a process-based solution that addressed the real needs of the company and its customers, and the first platform for community interaction was launched.

Since then, LEGO has launched numerous digital platforms to strengthen its connections

Jørgen Vig Knudstorp has an often-repeated quote: "*You do not think your way into new ways of acting—you act your way into new ways of thinking.*" It is in that spirit that LEGO has developed the capabilities for digital leadership by attempting multiple (but focused) to the large communities of LEGO fans and strengthen the collaboration and involvement of passionate builders in the development and design process of new models. Additionally, after LEGO MINDSTORMS, numerous product lines combining physical and digital play have been launched, and LEGO now operates an

R&D Future Lab to study, improve and nurture those experiences. For example, LEGO Fusion was launched in 2013 and combined real builds with bricks with virtual games: users build something with the bricks and scan the shape with a downloadable app into a smartphone or tablet and watch their creation become part of a virtual game. LEGO Dimensions was launched in late September 2015. This is an action-adventure video game for popular consoles (Sony PlayStation, Nintendo Wii, Microsoft Xbox) that includes many characters from 14 different LEGO franchises. It combines the physical and digital in that the player has LEGO figures and a gateway built with bricks that can be played within the game.

Another product digitalization move involved crowdsourcing innovation and developing LEGO community platforms. LEGO has always designed its products together with children to try to ensure that they are loveable products, and the advent of digital platforms has strengthened this.[22] In 2008, the company launched LEGO Ideas (https://ideas.lego.com), a website where amateur designers share their ideas for new LEGO sets, and fans vote on them and give them "likes." This website has about half a million visits per month and over 100,000 registered users. Any project proposal with more than 10,000 votes goes to a LEGO review board. A chosen project will be developed in collaboration with the project creator, who receives 1% of net sales if the product is launched. Crowdsourced LEGO sets (for example, The Big Bang Theory Apartment set) do as well in the market as standard sets. Crowdsourcing product ideas in this way has added thousands of designers to the 200 in-house product designers.

The LEGO Ideas website can monitor trends and changing interests among LEGO set builders and fans. It also mobilizes communities for user-designed projects as well as deepening the connection between users and the company.

The LEGO Group has also created several community platforms for children. LEGO® Club has 5 million registered users and offers content and tools to stimulate the creativity of children aged 4 to 13. My LEGO Network (www.mln.lego.com) is a safe social networking site for children, where they can share their LEGO creations. ReBrick (www.rebrick.lego.com) is a sharing platform designed for users aged 13+, known as Teen Fans of Lego (TFOL). Projects are created outside of brand-implemented tools and published on independent platforms such as blogs or Flickr. There is also a growing number of Adult LEGO User Communities (AFOLs, or Adult Fans of LEGO) that have their own websites, blogs and discussion forums. The 220+ LEGO user community groups each have a representative who is part of the LEGO Ambassador Network, which serves to nurture the relationship with the LEGO Group. All of these initiatives further the digitalization of the company around product design and community building for the future.

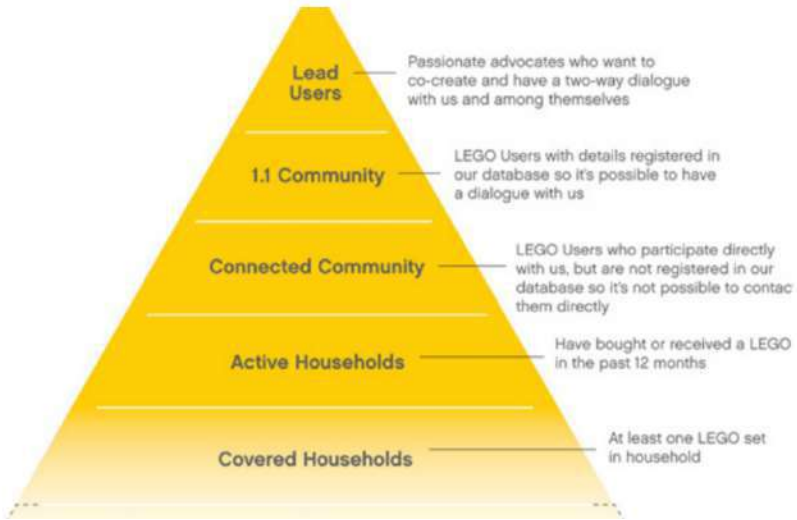
22. Antorini, Y., Muñiz, A. and Askildsen, T. "Collaborating With Customer Communities: Lessons from the LEGO Group, *MIT Sloan Management Review*, Spring 2012.

Marketing Digitalization Moves

There is a lot of overlap between marketing and managing the product experience in a digital environment, because the digital experience is part of the product. Furthermore, in an age of social media, chatter, public critique of products, website interaction and customer communities, marketing has become a pull activity and is more about engagement and interaction with customer communities than a push activity for product information. LEGO divides its market constituencies into *customers* (retailers such as Target, Walmart and Amazon), *shoppers* (adults such as parents and grandparents who buy LEGO products for children), *consumers* (those who play and learn with LEGO products, mostly children) and *fans* (adult and teenage fans who are both shoppers and consumers). The marketing digitalization moves have addressed all four constituencies in different ways. We highlight three of the moves below.

1. The Omnichannel Marketing Move. Reaching out to customers in a digital environment requires omnichannel marketing—i.e., using different kinds of digital channels as well as physical channels. LEGO products have physical presence in the company's own stores and retail stores, and brand presence created by several LEGOLAND parks and LEGOLAND Discovery Centers, and very active "Brick" conventions around the world (the conventions are often arranged by AFOLs, not by the LEGO Group.).

Figure 3: The Affinity Pyramid Engagement Map



All G4 Households with Children

© The LEGO Group

In its marketing digitalization efforts, LEGO increased the use of various digital channels, such as social media, the main LEGO website and websites specially designed for fan groups. It has also started using interactive story telling within "trailer" online games to engage with children around new characters in LEGO sets. The company has also created an augmented reality product catalog. A product box can be scanned with a downloadable mobile app, and an animation of the construction set being assembled is instantly displayed. LEGO has also realized that cycle times are very fast for producing interactive digital content for marketing. Although it has an internal ad agency, it has partnered with external digital ad agencies to speed up marketing digitalization efforts.

In addition, LEGO has partnered with Warner Animation, which released The LEGO Movie® (www.thelegomovie.com) in 2014. This is an animated adventure comedy film based on LEGO construction toys and became a $486 million global blockbuster. The company received royalties for the use of its brand and the film's intellectual property rights, but most importantly, the construction sets launched in conjunction with the movie were extremely successful both in terms of revenue and of greatly increasing brand affinity with families. Two sequels have been announced, for 2017 and 2018.

2. Increased Digital Engagement with LEGO Communities. Increased engagement with a customer community drives innovation and revenue growth, and LEGO has committed considerable resources to maintaining a culture of engagement around its community platforms. The affinity pyramid (see Figure 3) suggests that the more digitally and directly connected members of a community are with an organization and other community members, the more likely they are to engage in providing information, in having two-way dialogues, in collaborating with each other and in co-creating products. Moreover, the more customers move up the affinity pyramid

through digital engagement, the more effective personalized micromarketing becomes. LEGO has used micromarketing data to better understand the path to purchase for its digitally connected customers and fans.

The company also continuously measures customer experience through a Net Promoter Score, a program that asks customers to rate their experience in real time on the web.

3. Globalizing Digital Assets. LEGO has continuously increased its intellectual property for new characters and franchises that have been hits, such as Chima and Ninjago, balancing its own IP with externally licensed IP rather than resorting to licensing deals. Furthermore, as combined physical and digital play has increased, the number of digital assets that the company has created to promote its products has also increased. For example, "trailer" online games mentioned above may need to be deployed to multiple major markets around the world, with multiple languages. The LEGO Group has sought to globalize these digital assets and to take advantage of economies of scale and scope. This has presented challenges in global governance and has highlighted a new dimension of marketing digitalization that the LEGO Group is learning about through the global deployment of its digital assets.

Enterprise Platform Digitalization Moves

The product and marketing digitalization moves have involved ecosystem partners and have put new demands on enterprise systems and platforms and on LEGO's Corporate IT function. The moves have created requests for applications and IT functionality that have grown from 5% to 30% of the IT portfolio, and that growth is expected to continue. Digitalization moves have also prompted the Corporate IT function to rethink the architecture of its enterprise platforms to meet the new business demands from customers and partners who want more responsive digital engagement. New features and capabilities have been continuously added to the enterprise platform to make it more responsive to digitalization, and its complexity has grown, prompting the need for two different enterprise platforms: a traditional one for transactions and a second-generation one for interactions and customer engagement. We describe five of the most significant enterprise platform digitalization moves.

1. Bolstering the Enterprise IT Platform. Developing and bolstering the existing LEGO enterprise IT platform began as long ago as 1999, when the company wanted to consolidate and increase the efficiency of business processes and formulated a "one company, one system" mission. A company-wide ERP project was launched with four principles: simple, global, consistent and standardized work processes. In late 2001, LEGO had a global enterprise-wide ERP system based on these principles and that supported the basic core processes. In 2002, a new IT plan was formulated based on the company's corporate strategy and the needs of the business units and business partners. The plan identified areas for providing business units with better IT systems support.[23] Despite the implementation of standardized processes globally, in 2004, the flow of information inside the company was inadequate. The LEGO Group had many silos and lacked visibility into which areas were running inefficiently and which were losing money. Consistent with the new CEO's action plan, the period 2004-2007 was characterized by continuously improving the enterprise IT platform, stabilizing the organization, streamlining processes and improving data sharing and business intelligence capabilities to create transparency and visibility about operations. When Henrik Amsinck joined the LEGO Group as CIO in 2007, he was pleasantly surprised by the robust state of the ERP platform. But, as he quickly discovered, there was still much work to be done in the ensuing years as the company's digitalization moves started to have major impacts on enterprise IT platform requirements.

From 2007, there were continual efforts to bolster the enterprise platform in many ways to support operational excellence, including knowledge sharing, collaboration and supply chain management. LEGO continued to enhance its business process management capabilities and its capabilities for sharing knowledge about processes "the LEGO way."

23 Some of this history up to 2004 is in Rikhardsson, P., Møller, C. and Kræmmergaard, P. *ERP: Danish Experiences with Implementation and Use*, in Danish, Børsens Forlag, 2004.

However, there were other factors that

development, using collaborative prototyping

influenced the evolution of LEGO's enterprise platform, driven by changing employee expectations as digitalization progressed. The "consumerization" of enterprise IT started to take hold as the experiences of employees as consumers influenced their expectations of ease of use of applications, friendly intuitive graphical user interfaces and simplicity. Just about everyone had a smartphone and was downloading apps, and employees wanted more than the standard cluttered ERP interfaces. As a consequence, LEGO's Corporate IT function augmented the enterprise platform with personalized end-to-end app experiences for employees, with simple graphical interfaces. Employees only got the apps they needed for their work tasks. In this way, Corporate IT managed to deliver personalized ERP functionality on employees' smartphones. Its philosophy was "what you see is what you need" rather than "what you see is what you get," and each app served its own individualized use.

To meet these employee demands, LEGO changed its application development process to have 100% user involvement before tools with visualization, such as iRise. The benefits of involving users are shown in Figure 4.

Increased connectivity with customers, whether through the LEGO website, online shops, community groups, LEGO fan clubs or social media, has also put many new demands on the enterprise platform. Similarly, product and marketing digitalization moves have placed further demands on both the IT organization and the enterprise platform. The enterprise platform was growing in multiple directions and now had started to become like a gigantic aircraft carrier that housed all applications, whether they related to operations and transactions or to consumer digital engagement and interaction.

As time went on, there was a growing realization that developing digitalization applications was very different from traditional enterprise applications development. The business priorities with traditional enterprise platforms are first cost, then quality, then reliability and then time. With digitalization platforms the business priorities are different. Time is the highest priority because the ability to release new business functionality becomes

Figure 4: Benefits of Involving Users in Augmenting the Enterprise Platform through App Development

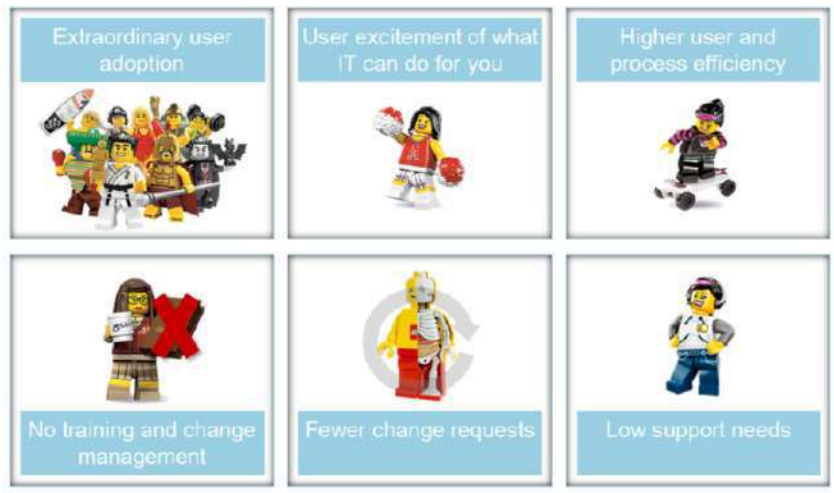


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Figure 5: Enterprise and Engagement Platforms

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a competitive advantage. Reliability is a close second because in a digitalization environment (such as an online store) a technology failure cannot be compensated for by manual workarounds of processes (as in a physical store). The third priority is quality, which is still a key requirement in areas such as security but becomes less important in the presentation layer as users become part of the testing and prototyping process. Cost is the lowest priority.

Furthermore, development practices for digitalization platforms are much more fluid, and there are fewer established industrial-strength development practices than there are for enterprise platforms. Moreover, the required delivery model and characteristics are also very different. Eventually, it became clear to LEGO that it needed a separate enterprise engagement platform.

2. Designing a Complementary Engagement

connected, even though the engagement platform would change rapidly.

LEGO's enterprise platform is rock solid, carefully designed and thoroughly tested. Its purpose is to handle transactions and records, and its architecture is tightly integrated. Platform requirements are carefully specified ahead of time. It is not easy to add functionality quickly and in an ad-hoc manner, and its integrity is guarded like the crown jewels because all enterprise operations depend on it.

However, new customer and partner demands from digitalization moves have a very different set of platform requirements: digital interaction, 24/7 availability even as changes are made, user-driven experience, experimentation, quickly added functionality that is "good enough" and a two-way real-time dialogue with users through a simple intuitive interface. It was clear to LEGO that it needed a different engagement platform

Platform. LEGO identified the need for an engagement platform that would complement the enterprise platform, with the two co-existing. By 2015, API (application programming interface) technology was sufficiently advanced to enable the two platforms to be loosely and dynamically and that the two platforms could not be tightly coupled but had to co-exist. It was also clear that open architecture, micro-services and APIs would drive the architecture of the engagement platform and that it would have loose-tight connectivity to the enterprise platform. At the time of writing (August 2015), the engagement platform and its

governance mechanisms were at an advanced stage of design. The conceptual idea behind the engagement platform is shown in Figure 5 and contrasted with the enterprise platform.

The key dimensions in the figure are the extent of architecture governance exercised and the speed of platform change. LEGO's expectation is that this new design will result in a 75% decrease in time for delivering functionality and a three-fold increase in development staff productivity (based on function point calculations using scrum/agile development methods). The engagement platform is designed to handle customers' digital interactions and is essential if digitalization is to be effective.

3. Restructuring the Corporate IT Organization for Business Responsiveness. LEGO's rapid revenue growth and the strategic need for increased digitalization has resulted in the Corporate IT organization expanding its staff base by close to 20% year on year for the last three to now approximately 600 full-time regulars. Historically, most IT employees have been located at LEGO headquarters in Billund and at the Enfield hub in the U.S.[24] However, now that LEGO has established new major office hubs in London, Singapore and Shanghai, IT employees are also being located at these locations. This transition started in January 2015, and Corporate IT (CIT) expects there to be more than 50 new colleagues at these three new hubs before the end of 2016.

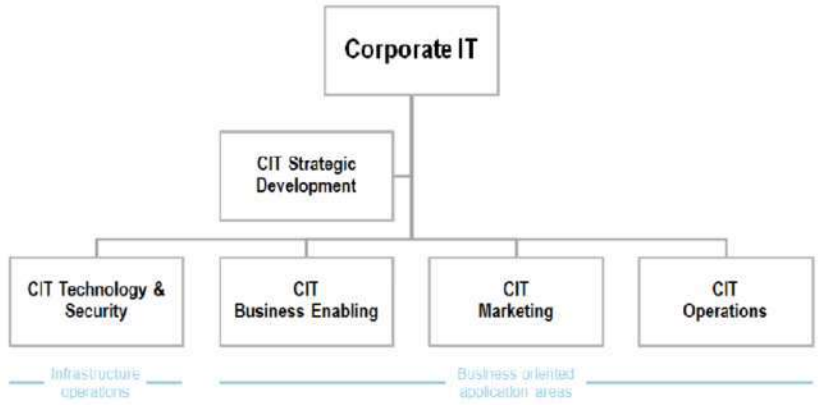
CIT will keep the competencies for developing the core enterprise platform components in-house at Billund and Enfield. But locating other IT people alongside the rest of the organization helps them appreciate, understand and share their colleagues' business challenges. Even their office space reinforces that they are LEGO employees first and IT employees second—they are surrounded by assembled LEGO products that range from Ninjago Master Wu Dragon sets to Star Wars Millennium Falcon displays to LEGO brick model replicas of the Sydney Opera House. They may be working on digital platforms, but they should never forget the core focus of the company—LEGO bricks.

With rapidly increasing digitalization, and changing needs from customers and the lines of business, CIT is under constant pressure to be agile and responsive to the business. CIT has therefore been restructured to mesh more

24 LEGO has outsourced application maintenance for less business-facing tasks to HCL in India. As a strategic partner to LEGO, HCL operates the LEGO-specific Offshore Delivery Center with approximately 200 full-time external consultants.

closely with the business (see Figure 6). It is now organized into five functions, three of which work directly and very closely with the business:

Figure 6: Configuring Corporate IT for Business Responsiveness



CIT Business Enabling, CIT Marketing and CIT Operations. CIT Technology & Security is more internally oriented and manages infrastructure and operations. The fifth function, CIT Strategic Business Development, was established on January 1, 2015, in the Office of the CIO to drive IT business planning and to create the ideas driving the need for new architectures for enterprise platforms and the development of the digital workforce.

Each of the three business-oriented functions has its own business CIO, and the technology-oriented Technology & Security function has a chief technology officer (CTO). This allows CIT to be led by one Executive CIO who can then spend more time focusing on long-term strategy and digitalization, together with the Director of CIT Strategic Business Development.

As well as delivering IT solutions, CIT Business Enabling's responsibilities include internal user experience management, business intelligence solutions, data warehousing, business process management, vendor management and portfolio management. CIT Marketing, which supports the product development, marketing and sales arms of the business, is responsible for CRM, e-commerce, digital marketing and customer front-end management. CIT Operations supports manufacturing, engineering and supply chain management. CIT Technology & Security is focused on the security of the enterprise architecture, core systems, infrastructure and hosting, and is also responsible for the global service desk and local end-user support.

There is a high degree of cross-functional collaboration within CIT and between it and the business. CIT has made a conscious effort to move from the traditional "plan-build-run" requirements-focused model of systems development to a joint collaboration model for finding solutions together with the business units. It has also realized that a very rapid and agile response is typically needed. CIT has also increased collaboration with external partners that bring special expertise, especially for products that have a digital component and for digital games.

4. Orchestrating Distributed Digital Innovation with Multiple Digital Officers. As more businesses offer products and services through digital platforms, they are appointing chief digital officers (CDOs) in addition to CIOs.[25] The CDO is typically closer to the business' customer offerings than the CIO and manages the customer engagement part of the platform as well as the generation of value from the digital product platform. For example, a digital entertainment company might have a CIO to manage its enterprise platform and a CDO to manage the content platform, creating value from it and managing how customers search for and consume digital entertainment content. The CDO will also monitor and manage the introduction of new technology innovations relating to the content platform.

LEGO, however, has taken a different approach to managing digital innovation: it has appointed a digital officer for each business area. LEGO's CIO and his team realized that digital innovation and technological advances that impacted the different business areas were becoming too numerous and overwhelming for CIT to manage by itself. Thus, LEGO is creating digital officers in a growing number of business areas (see Figure 7). For example, it has a Digital Games Officer in the marketing area who monitors and manages digital innovations and solutions for digital (online) games, then works with CIT to implement platform solutions for digital games. Having function-specific digital officers increases the digital savvy and proactive digitalization moves of the business units and their ownership of the resultant digital solutions.

The appointment of multiple digital officers is also changing the way that digital innovation occurs at LEGO because the innovation process is now distributed and is closer to the point of business expertise (see Figure 8). As a result, the innovation process is now more effective. In the past, the CIO and CIT managers were order-takers; a business unit brought its requirements for a system to CIT, and CIT provided the solution, the platform and technology innovation. Now, the business unit proactively discovers a digital innovation in its area, picks a solution and then discusses it with CIT as a partner. CIT then helps to integrate the solution into the existing enterprise platform (and in the future into the

25 See, for example, Barr, S. *What it takes to build your Digital Quotient*, McKinsey & Company, June 2015, available at www.mckinsey.com/insights/organization/what_it_takes_to_build_your_digital_quotient.

Figure 7: The Rise of Multiple Digital Officers across the LEGO Group

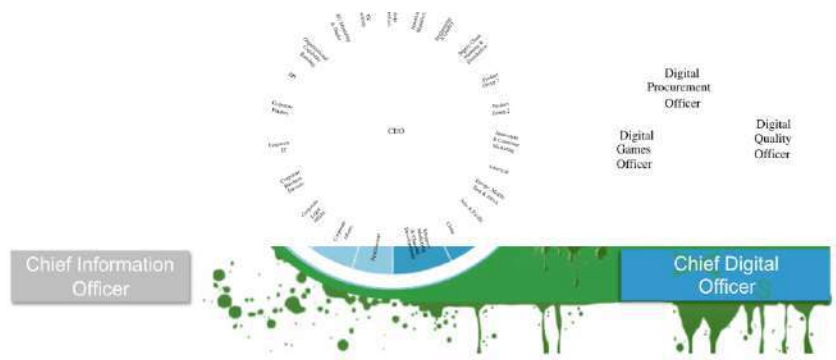


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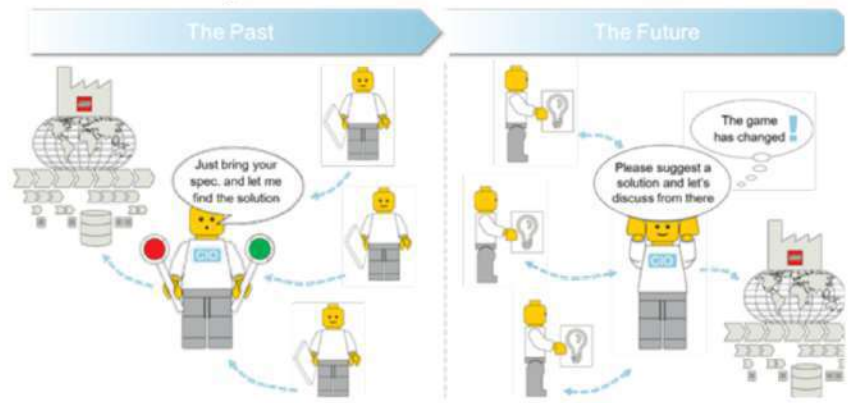
Figure 8: Multiple Digital Officers Enable the Digital Innovation Process to be Distributed between Corporate IT and Business Units



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engagement platform as appropriate). The CIO and CIT are now solution-takers, partners and platform-integrators. Distributed digital innovation is a more effective approach in the dynamic and hectic environment of digitalization in the midst of organizational transformation.

5. Building up the Digital Workforce and the Work Environment in Corporate IT. An effective digitalization initiative requires a conscious effort to build up the skill set and change mindsets in both the corporate IT workforce and the entire workforce. Achieving this is especially challenging for a legacy bricks-and-mortar company like LEGO, where there are both traditional long-term employees and born-

digital younger employees who are continually joining the company.

The dynamic demand for new product and marketing digitalization moves (which resulted in the need for an engagement platform) is changing the mix of work for LEGO's CIT employees. They now spend more time with the business units, devising IT solutions, preparing specifications and prototyping, rather than on traditional development and programming. Not only is the work itself changing, but the mindset within CIT is now one of being more willing to experiment, learn and take risks, and of having an external orientation. There has been a conscious effort to create a mindset that fits with dynamic digitalization. Together with coaching from CIT managers, the new mindset has started to change the work culture.

There has also been a conscious effort to encourage CIT employees in particular and LEGO employees in general to collaborate with the many external partners that provide complementary expertise. In 2015, informal "chatter" from partners was suggesting that collaborating with LEGO is a pleasant experience because of the "playfulness" of the LEGO culture.

CIT has changed its hiring policies so it can develop the flexibility needed for dynamic digitalization. Previously, CIT hired for narrowly specified positions and often recruited highly specialized people. Since 2011, new recruits have been hired for a career at LEGO rather than for a specialized job in CIT. There has been a preference for people who can adapt to task and position changes, whether in CIT or other parts of the enterprise. Every year, about 50 CIT employees are redeployed within the company. This has resulted in CIT people getting greater exposure in the wider organization, their knowledge and expertise being spread more broadly and the internal hiring process having access to a supply of digital talent.

CIT has also put a lot of effort into creating a motivating and exciting workplace. It has taken various initiatives to blend CIT employee development with workplace excitement. In 2013, for example, it ran a two-day digitalization boot and covered new digital trends as well as the organizational, cultural, ecosystem, partnering and customer challenges of digitalization.

CIT's efforts to build up the digital workforce and the work environment have paid off. In 2014, LEGO ranked second to Google as being the most popular IT workplace in Denmark among IT graduates.[26] Three years before, LEGO was not even in the top 100. Among IT people with five years' experience, LEGO CIT now ranks in the top five in Denmark.

Business Impacts of Digitalization at LEGO

As described above, the LEGO ecosystem of customers, partners and employees has been transformed through its digitalization moves, resulting in innovative products, new processes and new types of relationships. In combination, the moves have helped LEGO in its multi-year transformation. The pain and critical problems that plagued the group in 2004 after its near-death experience were complacency, excessive diversification into areas in which the company had little experience, losing focus on the bricks, not focusing enough on the customer, lack of flow of information and knowledge silos. LEGO and its ecosystem are better off thanks to digitalization. The group is now on a healthy growth path of increasing revenues and profits.

Focus on the customer has soared during the multi-year transformation. In 2015, LEGO was rated as the most powerful global brand. That cannot be attributed solely to digitalization, but many of the product and marketing moves described above have helped to build brand affinity and enormously enriched digital engagement and interaction with the customer ecosystem in numerous ways. The company, its partners—and most importantly its customers, consumers, shoppers and fans—are all appreciating and enjoying the enhancements that digitalization has brought about.

camp for young and recently hired graduates, with participation from CIT management and some mid-level CIT employees. The boot camp was facilitated by a prominent consulting firm

26 "LEGO overhaler Microsoft: Sådan indfanger vi Danmarks bedste it-folk [LEGO overtakes Microsoft: How we capture Denmark's best IT people]," *Computerworld Denmark*, available at http://www.computerworld.dk/art/231176/lego-overhaler-microsoft-saadan-indfanger-vi-danmarks-bedste-it-folk#Re0jq1AFYWqlwwas.99.

Figure 9: The Path to Enterprise Digital Leadership

LEGO's Journey Toward Digital Leadership

Figure 9 shows how LEGO depicts its progression toward enterprise digital leadership. Digitalization is primarily a process (and a continual one), but it is also a state, and there can be different levels of digitalization. At first, digitalization efforts are typically ad hoc and disjointed. Next, some enterprises will execute increasingly enterprise-wide digitalization and become committed to it. This is an inflection point at which it is possible to accelerate up the curve. Businesses become more successful at building the foundations and capabilities for enterprise digital leadership. LEGO's digitalization moves and the new ways of thinking about enterprise-wide digitalization indicate that the company is beyond the inflection point and has been building those capabilities, and is climbing the curve to increasingly higher levels of enterprise digital leadership.

The LEGO case shows that it is favorably poised for digital leadership. It is clear that the company, from the CEO and top management team downwards, has a deep commitment to enterprise-wide digitalization, and there are many examples that indicate its capabilities for digital leadership have been enhanced. One is the development of the new separate (but coupled) engagement platform. The design of this platform would not have been possible without the platform capabilities built over the years that allow LEGO to simultaneously take advantage of software-as-a-service (SaaS) applications and APIs in a well-structured open three-layered architecture, while also solidly operating core enterprise platform components such as Oracle ATG and SAP. It would not have been possible to design a full-governance framework and operating model for dynamic adaptive development of applications and new functionalities for the engagement platform without CIT's workforce capabilities that have been developed for digitalization applications over the years. The user experience focus of the engagement platform would not have been possible without the enterprise-wide digitalization capabilities that have developed over the years.

Some of LEGO's early digitalization moves were painful and only partly successful, which caused the company to rethink the approach to building platforms for digitalization and led to the twin platform model. All the learning that was gained from multiple aspects of enterprise-wide digitalization through the years is being built into the new engagement platform so it can serve the digitalization needs of LEGO's business ecosystem of customers, partners and employees in a more agile and resilient way.

LEGO has enhanced its enterprise capabilities through digitalization and has moved further along the path toward digital leadership. It is poised to continue this journey and is much better equipped to handle future digital leadership challenges.

To assist other organizations in their digital leadership journeys, we have constructed Tables 1 to 6, one for each of the six foundational

building blocks of digital leadership—business strategy, business models, enterprise platforms, people mindset and skill set, the corporate IT function and a humanized workplace. Each table describes the characteristics of the particular building block and the enterprise capabilities needed for that building block. Based on LEGO's journey toward digital leadership, the right-hand column of each table lists *some* of the possible mechanisms for enhancing enterprise capability for a particular characteristic. These tables are not comprehensive because, to avoid overloading readers, we have selected only three distinctive characteristics for each foundational building block.

Table 1: Distinctive Characteristics of Business Strategy for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability
A Fused Business Strategy that is Executed	The strategy is executed through enterprise-wide **digitalization, rather** than through a business strategy that has an extra digital **layer, with deep** top management	Top management team has the **organizational** capability to devise and implement business strategy through a **digitalization mindset**.	• Get the CEO to disseminate **the digitalization vision to all** employees • Ensure top management **articulates its commitment to leveraging digitalization as a critical priority for the** enterprise • **Base the organizational**

Digitally	commitment to **digitalization**.		**Boss and organizational** structure on visibility and transparency • Organize the corporate **IT function so it is close** (proximate) to business units
A Business Strategy that Boosts Core Distinctive Competences through Digitalization	The strategy recognizes **that digital platforms** and digital media can pull companies into too many adjacent markets or areas where they **do not have distinctive competences**.	Top management recognizes the need to closely integrate **digitalization into** strategy rather than **loosely couple it**.	• Understand and focus on the **enterprise's core distinctive** competence • Learn how to partner with other companies that bring complementary skills in the digital and media space
A Business Strategy that Leverages the Ecosystem of Partners for Complementary Digitalization Competences	The strategy is based **on collaboration** with partners rather than viewing them as vendors or going it **alone**.	The enterprise has the capability to work well **with different** types of partners across enterprise boundaries and in **different types of markets**.	• Manage visibility and transparency across porous boundaries • Embed partners in enterprise teams • Work with dynamic partners that can scale up and down **quickly in digitalization projects** • Work with partners with niche **digital expertise when needed**

Table 2: Distinctive Characteristics of Business Models for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability
Business Models for Products and Services that Take Advantage of both the Physical and Digital World as Appropriate	**Self-explanatory.**	Business unit teams and partners have **the organizational and digital platform capability to design,** modify and assess digital business models and hybrid business models on all their dimensions (value **proposition, interface, platform, partnering processes, revenue sharing**).	• Launch new products and services with both physical and digital components • **Launch initiatives with partners** that bring special technology or **media expertise**
Business Models for Products and Services that Co-Create Value with Customers and Communities	The business model recognizes the strategic value of leveraging partners and customers in digital business ecosystems with **high connectivity**.	The enterprise has the capability to manage porous boundaries with customers and **partners**.	• Use crowdsourcing for new product or service design ideas • Launch online community groups • Move customers up the **affinity pyramid to increase** engagement • **Launch omnichannel marketing initiatives** • Launch new products and services with ecosystem partners
Business Models that Assess SMAC Technologies through a Digitalization Value Lens	The business model encourages the use of social media for business **discovery, mobile** apps for consumer enterprise **applications, analytics for insight** and cloud services for reducing **complexity**.	The enterprise and corporate IT has the capability to harness consumer-grade technologies within **enterprise applications and business units**.	• Use social media for business **applications** • Launch mobile apps for **enterprise functions consistent** with "what you see is what you need" • **Develop analytics competency** centers within business units **for micromarketing** • **Experiment with multiple cloud providers and SaaS applications**

Table 3: Distinctive Characteristics of Enterprise Platforms for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability

A Rock-Solid Enterprise Platform that is Consumer-grade-friendly to Employees	**A carefully specified,** designed and tested **enterprise platform, often based on ERP systems. Digitalization, however, requires** consumer-grade **applications that** help make the enterprise more **efficient and spread digitalization more easily**.	Capability of corporate IT to develop: • **Applications using** the plan-build-run **paradigm**. • Consumer-grade apps within the **enterprise platform environment**.	• Enhance core enterprise **platform team capabilities and** keep them in-house • Launch mobile apps **in enterprise platform** environment • Work with external partners **only on non-essential** enterprise tasks
An Engagement Platform that Responds Very Quickly to Dynamic Demands for New Functionalities	**A platform that** enables dynamic **digital interaction** with customers and partners in the ecosystem and that allows rapidly changing **functionalities to be added quickly. With such a platform the** order of business **priorities changes to time, reliability, quality and cost**.	Capability of corporate IT to: • Undertake agile **development**. • Deliver "good **enough" solutions and iterate**. • Maintain 24/7 availability even when changes are **made**. • Operate **continuously in beta mode**.	• **Use digitalization requests from customers, partners and** business units to enhance the ability to deliver • **Develop orientation programs** (**inspired, for example, by SMAC** technologies) to progress the **engagement platform concept**
A Loose-Tight Coupling of Enterprise and Engagement Platforms that Place a High Priority on User Experience	The enterprise and engagement **platforms are** architected so they can be simultaneously managed yet give high priority for the user experience needed for **digitalization**.	Capability of corporate IT to: • Be ambidextrous and have the dual mindset needed to manage **both platforms simultaneously**. Create strong governance frameworks and **operating models for both platforms**.	• Use social media for business **applications** • Launch mobile apps for **enterprise functions consistent** with "what you see is what you need" • **Develop analytics competency** centers within business units **for micromarketing** • **Experiment with multiple cloud providers and SaaS applications**

Table 4: Distinctive Characteristics of People Mindset and Skill Set for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability
An Experimenting and Iterating-to-Success Mindset	Propensity of individuals and groups to "act their way into new ways of thinking" and to iterate to success through **experimenting,** failing and trying **again**.	Capability to manage transparently and **accept failures**. Capability to take risks **on new initiatives**. Capability to operate **continuously in beta mode**.	• Carry out experiments and prototypes • Train employees to accept failures and have mechanisms for sharing and learning from them • Encourage a culture **of collaboration and experimentation** • **Encourage and deploy flat hierarchies, where decision** authority is delegated
Digital Generalist and Collaboration Skill Sets that can Be Deployed across Porous Boundaries	People with the skillset to move between tasks and jobs across business units rather than rigid technical specialists who just want to work in **corporate IT**.	Ability to move people between business **units**. Ability of the HR department to **have fluid job specifications**.	• Rotate people through business units and jobs • **Integrate diverse employees, and partners, through shared** purpose and meaning • **Provide opportunities for** employees to constantly develop new skills and seek new **opportunities**
The Mindset and Skills that Make People Comfortable with Changing Tasks and Assignments Quickly and Flexibly	People with the **flexibility to meet** challenges and **opportunities as they arise, and with an external focus**.	**Same as above**.	• Be prepared to "give up" a good employee in your business unit **when there is a critical need** elsewhere in the enterprise

Table 5: Distinctive Characteristics of the Corporate IT Function for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability
A Corporate IT Function that is Meshed Closely with Business Units and Partners, and is Close to the Business on Multiple Proximity Dimensions	**The IT organization is a solution-taker, partner and platform integrator.** It needs to mesh well with business units and external partners from the **ecosystem. It needs** to understand the **multiple dimensions** of proximity and **operationalize them** for its own cultural **context.**	**Corporate IT function** has the capability to collaborate **closely with multiple functional areas and different business units. It also has** the capability to collaborate closely and work with many changing agile partners that are comfortable with not **having clearly defined work packages.**	• **Restructure the IT organization** to improve its proximity to business units and the enterprise at all levels to increase the **level of collaboration, mutual** understanding and visibility of **the IT function** • Assign a CTO to manage the plan-build-run way of organizing IT • **Promote an "Enterprise first, IT** Second" mentality • Embed partners in corporate IT teams
A Corporate IT Function that Distributes the Ownership of Digital Innovation throughout the Enterprise	**Digital officers** in business units work closely with **corporate IT.** Responsibility for **digital innovation is thus distributed, not** centralized with a **chief digital officer.**	**Same as above.**	• **Appoint digital officers in the** business units • **Emphasize communication and** knowledge-sharing about digital **solutions** • **Practice shared-solution finding** while realizing that a very rapid and agile response is needed
A CIO Who is Equally Comfortable Running Corporate IT and Overseeing Digitalization in the Enterprise	The CIO spends **time focusing on** enterprise-wide **digitalization** and inspires the corporate IT workforce to have an outside-in **mentality. He or** she will also need to drive ideas for new enterprise **platforms.**	The enterprise has the capability for transparency **and information** sharing at the top management **level. It also has** the capability to build a corporate IT **platform that takes** an enterprise-wide **view.**	• Interact and collaborate frequently with top management team • **Evangelize the digitalization** message and philosophy to the CEO and board • Educate corporate IT employees **on digitalization philosophies** • Create a strategic business **development function within** corporate IT

Table 6: Distinctive Characteristics of a Humanized Workplace for Digital Leadership

Characteristic	Description	Enterprise Capability	Mechanisms for Enhancing Enterprise Capability
A Workplace that Offers Easy and Accessible Digital Experiences	The workplace provides employees **with personalized,** mobile and consumer-grade digital experiences (including on the enterprise **platform**). **These** experiences provide consistency in private and business use of technology **and user interfaces.**	Ability of corporate IT to work with employees to co-**create** (**develop,** test and build) personalized consumer-grade **mobile apps.**	• Provide user-friendly enterprise **applications/apps for the** workplace • **Develop applications/apps that** are personalized for employee tasks • Implement a "bring your own device" policy
A Workplace	The workplace provides digital-	**Same as above.**	• **Launch platforms for collaboration and knowledge**

that Encourages and Prioritizes Ubiquitous Learning and Knowledge-Sharing	**savvy employees,** who require a higher purpose **for their work, with continual opportunities to** develop themselves **and learn**.		sharing • **Practice knowledge sharing and open information exchange** • Engage employees in enterprise-**wide digitalization events**
A Workplace that Thrives on Location and Time Flexibility	The workplace accommodates **employees' different needs and priorities** for working hours **and where to work**. The born-digital **generation's desired** mode is "working in the moment of need" rather than "working when **requested**."	Capability of HR and the enterprise to empathize with **employees' lives,** families and personal preferences while **still preserving productivity**.	• Allow employees to decide how and when to work • **Invest in digital platform capabilities for remote work** • Provided 24/7 technology support services • **Make information available wherever employees are, via multiple and mobile devices**

Lessons for Digital Leadership

LEGO's various digitalization moves have resulted in learning throughout the company. The lessons have resulted in new ways of thinking about the strategic success of digitalization and the requirements for digital leadership and will be of value for other organizations. We describe what was now the new way of thinking about digitalization at the top management level. LEGO has recognized that digital leadership entails communicating a clear vision from the top and a true commitment to execution.

Lesson 2. Use Digitalization to Bolster Business Strategy around Your Core

be of value for other organizations. We describe these lessons under three headings: new ways of thinking about enterprise digitalization, new ways of thinking about platforms and new ways of thinking about the digital workforce. In each of these areas, the lessons have changed both the lens through which LEGO views digitalization, and the vocabulary and culture relating to digitalization. In combination, these lessons and the new ways of thinking have had a transformational impact at LEGO in terms of building better foundations for digital leadership and enhancing its capabilities for digital leadership.

New Ways of Thinking about Enterprise Digitalization

Lesson 1. Execute Business Strategy Digitally. In late June 2015, a few days before most Danes go on their annual July summer holiday, Jørgen Vig Knudstorp, LEGO's CEO, posted an internal company blog to all employees wishing them a great summer, with the subject line "No more digital strategy—executing strategy digitally." What he meant was that there was no longer a separate digital strategy that was aligned with business strategy, but that the corporate business strategy, itself was executed through digitalization. He used several examples to illustrate LEGO's new way of thinking. He likened it to the difference between an established taxi company's cab-hailing app and Uber, where digitalization has transformed the entire business model and the corporate strategy. He also likened it to designing an e-book with interactivity and personalization and other unique digitally enabled features that cannot be compared to anything that was available in hard copy form. His words from the blog say it best: "*We need to bring the digital technology to bear in a very fundamental and business model changing way, it is not a layer or a way of distributing content—it is the thing itself.*" In that summer send-off message, the CEO was telling the entire company

Distinctive Competence. Digitalization has been one LEGO's four strategic priorities since 2009, resulting in a continuously increasing percentage of hybrid products that combine physical and digital play, and many partnerships with companies in the media and digital industries. However, despite all the digitalization moves, LEGO has stayed focused on bricks—its core distinctive competence. LEGO has learned the lessons from its early forays into too many adjacent markets and has learned to keep the core business strategy focused on the brick while leveraging digitalization. Organization's should not be seduced by Apple's success in moving into adjacent markets through digital platforms as it moved from computers to music to mobile phones and more. In all these moves, Apple has transferred its distinctive competencies in software development, hardware design, user-friendly interfaces and supply chain management. For most organizations that is not the case, and they need to be very careful that digitalization neither deflects nor diffuses their core business strategy away from their core distinctive competencies. All C-level executives (including CIOs) need to be acutely aware of that as they co-drive digitalization demands from their companies and their business ecosystems.

Lesson 3. Position the Corporate IT Function Close to the Business to Enable Responsive Digitalization. The LEGO Group restructured its CIT organization for business responsiveness, with more IT people located in the major business hubs. However, it learned that co-location is one of many proximity dimensions. There is also a collaboration proximity dimension, and CIT learned that joint collaboration for solution finding with the business units is much more effective than the "plan-build-run" requirements-focused systems development model used for enterprise platforms. Then there is the business area proximity, where each business area has an associated CIT unit with a CIO who directly engages with and intimately

understands that area's issues. There is also cultural proximity; at LEGO, the strong corporate culture precedes and trumps the IT culture. To achieve responsive digitalization in a dynamic business environment, organizations need to understand the multiple dimensions of proximity and how best to operationalize them in their own context. Effective digitalization requires positioning corporate IT close to the business on all these proximity dimensions.

Lesson 4. Create Multiple Digital Officers to Distribute Digital Innovation across the Enterprise. LEGO's CIT learned that creating digital officers in each business area is a much more effective way of orchestrating digital innovation. This arrangement has resulted in more effective digitalization because the business areas are more proactive solution-providers, and the role of the IT function is more of a solution-taker, partner and global platform integrator. LEGO's approach is quite different from the emerging wisdom of having a CDO in addition to the CIO and very different from the idea that increased digitalization and the rise of CDOs will mean there is less need for CIOs. In the case of LEGO, there is one Executive CIO and multiple digital officers throughout the business areas. We believe that creating multiple DOs is applicable to all industries and is a prerequisite for effective digital leadership.

Lesson 5. Leverage the Ecosystem of Partners for Complementary Digitalization Competencies. LEGO learned that it is best to leverage the ecosystem of partners for complementary digitalization competencies rather than get involved in an area that deflects from the company's core skills and competencies. In a dynamic digitalization context, leveraging partners with complementary competencies is not only helpful—it is crucial. It is also an effective way of minimizing organizational complexity because it can be hard to establish a critical mass of competencies within some narrow areas of functional expertise.

Lesson 6. Iterate to Success in Digitalization. In a company-wide blog, LEGO's CEO emphasized that effective digitalization and digital leadership require a different mindset that nurtures the capability to experiment, learn and iterate: "*Working digitally is also a learning*

the minimum loveable experience out there. To live in beta mode, to involve users in making it better. To constantly be behind in upgrading platforms and systems because they move so fast ..." This new way of thinking comes from the learning gained from the many iterations of LEGO's digitalization moves—where there have been failures as well as successes. Digital leadership means embedding this way of thinking across the enterprise. Experimenting and iterating is the new normal for designing processes and platform developments.

New Ways of Thinking about Digital Platforms

Lesson 7. Recognize that User Experience Drives IT Architecture, Not Vice Versa. This lesson derives from the efforts LEGO made in bolstering the enterprise platform to accommodate the significantly growing demands for new applications and functionalities arising from the company's product and marketing digitalization moves. It also results from LEGO's realization that there was a need for a complementary engagement platform whose architecture was more suited to digital interaction and that would provide a more "wow" user experience and allow functionality to be added quickly. Through its enterprise platform, LEGO CIT had for years provided employees with classic SAP ERP interfaces but realized it could increase end-user and process efficiency by offering consumer-grade applications. User experience is a fundamental part of IT solutions.

Because the engagement platform will focus on the external digital audience, user experience is a fundamental part of IT solutions on this platform. In the past, LEGO first designed the enterprise IT architecture for integrity and then added the user interface and user experience on top of that—living with whatever constraints that provided for user experience. For dynamic digitalization where the user experience is critical and key, that approach no longer works. Now, LEGO needs to first think through what the user experience requirements are and then build an IT architecture that is suited to that.

Lesson 8. Recognize that Dynamic Engagement Platforms for Digitalization Invert Business Priorities and Generate a New

learned that digitalization moves invert the typical business priorities for traditional enterprise platforms (cost then quality then reliability then time). Digitalization requires a dynamic engagement platform where the priorities are time then reliability then quality then cost. This change in priorities requires IT organizations to adopt an "ambidextrous" mindset where they can simultaneously manage both types of platforms, which generates a new level of technical and managerial complexity for corporate IT departments. They must provide a flexible and open engagement platform while also reducing complexity and maintaining security in the enterprise platform. The explosion of demand for new functionalities resulting from increased digitalization will further increase complexity in terms of scale and scope. Managing the ambidextrous nature of IT requirements and the growing complexity is a top priority for corporate IT leaders when designing and managing dynamic digital platforms.

Lesson 9. Collaborate with Technology Vendor Partners to Create Dynamic Digital Platforms. LEGO's CIT organization has had to collaborate and partner with many new technology vendors to deal with all the requirements of the various product and marketing digitalization moves and with the dynamic changes needed in platform functionalities. It has learned that there is a need for technology vendors that work as partners, are agile and are comfortable working without clearly defined work packages. CIT moved from working with a few big partners to working with many diverse partners, some of which are niche players in their specific areas, and it learned how to manage the relationship with those types as well. CIT also realized that as vendors become true partners, they are increasingly embedded in CIT teams, and boundaries become more blurred. Thus, any company that is embarking on digitalization in dynamic business environments will need to think through how to manage its relationships and boundaries with new types of vendor partners.

Lesson 10. View SMAC Technologies Through a Digitalization Value Lens. The term SMAC (social, mobile, analytics, cloud) has been used to concisely express the four key technologies that are driving digital innovation—i.e., digitalization. LEGO learned from its digitalization moves the importance of social media in business and their value in discovering customers' concerns and needs. It learned from changing employee expectations and the consumerization of enterprise IT that people expect the same type of user experience in their enterprise applications as they get from mobile apps. It learned the importance of analytics/big data in generating valuable insights from micromarketing and increased digital engagement. It learned the value of the cloud in delivering new applications easily from using SaaS technologies for many corporate applications and that cloud computing creates much value as a "complexity reliever" rather than just as a cost saver. Thus, viewing SMAC technologies through a digitalization value lens provides a different perspective: social media in business creates value from discovering things; mobile technologies create value through using convenient apps; analytics creates value through real-time insights and personalization of marketing and products; and cloud services create value through reducing complexity. Assessing SMAC technologies through a value lens will lead to more astute use of the technologies for effective digitalization.

New Ways of Thinking about the Digital Workforce

Lesson 11. Hire Digital Generalists Rather than Just Technical Specialists. An often repeated mantra is "Hire for a Career not a Job." LEGO's CIT organization has recruited more technical staff to meet the company's new digitalization needs and learned that it is best to hire flexible, dynamic and adaptable employees who can cope with task and position changes and can work on digitalization anywhere in the enterprise. Any company seeking to develop digital leadership capabilities and trying to boost its digital workforce should hire technical people for a digitalization career in the company rather than for a specialized job in IT. To augment their enterprises' capabilities for digital leadership, CIOs need to rethink their hiring criteria for corporate IT.

Lesson 12. Create an Attractive Workplace for Digitally Savvy People. LEGO's culture has always nurtured playfulness at work and creating

a fun, collaborative environment. It has also realized that the new born-digital generation has different workplace expectations in terms of flexible working hours and mobility, information sharing and consumer-grade technology capabilities and access. LEGO's CIT organization has therefore deliberately set out to create a more humanized workplace with more interesting and meaningful work. As the extent of digitalization increases and more born-digital employees enter the workforce, the need to provide an attractive workplace will become more critical.

Lesson 13. Improve and Monitor the Digital Quotient[27] of the Workforce. As a legacy bricks-and-mortar company, LEGO has a mix of long-standing traditional employees and an increasing number of born-digital millennials. As well as digital savvy employees, the digitalization culture requires adaptable and resilient people with the ability to thrive in a fast-changing environment. With such a heterogeneous workforce, LEGO has realized that not everyone can be at the same level of digitalization readiness and has accepted that some employees will never achieve a high level of readiness. Even so, these employees can still have valuable roles in digitalization moves. Companies seeking to develop their workforce for digitalization should measure their digital of each of these foundations of digital leadership and how enterprise capabilities for digital leadership can be developed.

We believe that digital leadership is a critical issue for organizations around the world in both developed and emerging economies, and in all industries, and for traditional bricks-and-mortar companies as well as born-digital companies. The insights from the LEGO case will help CIOs and CXOs in other organizations aspiring to become digital leaders. Our aim has been to present the foundations and capabilities required for digital leadership in way that makes it simpler for others to operationalize them and take advantage of them. Achieving digital leadership will, however, require stamina to stay the course because effective digitalization is a long-term effort and involves deep organizational change.

We believe that LEGO's digitalization experiences and learning helps to advance understanding of how to more effectively lay the foundations and build the capabilities needed for digital leadership. We also hope that this article will stimulate more researchers to develop theories of digital leadership—theories that can be applied in practice so that digitalization can make significant business impacts.

Finally, in the spirit of the LEGO experiential

quotient, seek ways to improve it and monitor it over time. There are various emerging methods and instruments for measuring an organization's digital quotient. These tools have culture and workforce components.

Concluding Comments

This article has described key aspects of LEGO's digitalization experiences and the lessons learned. The LEGO case indicates that digitalization and digital leadership will require six foundational building blocks: a different kind of business strategy, different kinds of business models, a different kind of humanized digital workplace, a different kind of enterprise platform integration, a different kind of people mindset and skill set, and a different kind of corporate IT function. The case has provided a better understanding of the distinctive characteristics learning philosophy, the collaboration we used in writing this article has enabled us to act our way into a new way of thinking. In particular, we found the collaboration between academics and practitioners both energizing and useful for us all. We believe this collaboration has helped us to develop a better understanding of digital leadership. The energizing song lyric from the LEGO movie continues to play in our heads: *"Everything is awesome. Everything is cool when you're part of a team!"*[28]

27 A company's digital quotient is a simple metric for its digital maturity. For more information, see Catlin, T., Scanlan, J. and Wilmott, P. "Raising Your Digital Quotient," *McKinsey Quarterly*, June 2015.

28 https://www.youtube.com/watch?v=StTqXEQ2l-Y; this rendering has been viewed over 45 million times.

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