BUILDING THE FOUNDATIONS AND ENTERPRISE CAPABILITIES FOR DIGITAL LEADERSHIP: THE LEGO EXPERIENCE

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Executive Summary

Every enterprise in every industry sooner or later finds itself in the midst of a digitally-intensive business ecosystem with emerging digital platforms, a growing demand for increasingly digital products and services, and constantly connected customers, partners, and employees. For legacy brick-and-mortar companies to be competitively successful in this new dynamic environment, a major organizational transformation for digitalization is needed and critical. While such transformations are not unusual, it is less clear how an enterprise can effectively build the foundations and nurture the path to enterprise digital leadership as they undergo large organizational transformations and position themselves for the future. We define digital leadership for the enterprise as doing the right things for the strategic success of digitalization for the enterprise and its business ecosystem.

How does an enterprise develop the internal capabilities for digital leadership in organizational transformation? What are the requisite digitalization moves around products, in marketing, with partners, within the enterprise business areas, and within the IT organization? How do these digitalization moves help enterprises learn new ways of thinking about digital leadership? How does such a vision emanate through the top management team and within all ranks? What are the changes needed in the corporate IT function’s structure and its role as an orchestrator of digital innovation? How does the role of the CIO change? What insights can we provide to CIOs and CXOs in all industries about how to build the foundations for augmenting the enterprise capabilities for digital leadership?

This paper seeks to provide such insights for next practices for digital leadership in organizational transformation while drawing on the decade-long digitalization journey and experience of the LEGO Group in Denmark. LEGO made wooden toys when it was started in 1932 – in 2014 it was the No. 2 toy company in the world based on annual sales and No. 1 based on growth and valuation, and it counts leveraging digitalization as one of its core strategic pillars.
Biographies of Authors

Omar A. El Sawy is Professor of Information Systems in the Data Sciences and Operations Department at the Marshall School of Business at the University of Southern California. He specializes in digital business strategy in dynamic environments. Omar holds a Ph.D. from Stanford Business School, an MBA from the American University in Cairo, and a BSEE from Cairo University. He enjoys integrating theory and practice and has been a six-time winner in the Society for Information Management’s Paper Awards Competition. He is a Fellow of the Association of Information Systems and a past Senior Editor of MIS Quarterly Executive. Omar lives with his family near a LEGOLAND in Southern California.

Pernille Kræmmergaard is Professor in Information Systems at Aalborg University and IT University of Copenhagen, where she chairs IT/Digital leadership programs at executive Master’s levels. She holds a Ph.D. and a Master of Science in International Business, from Aalborg University. Her research focus is on digitalization; the changing role of the IT organization, the changing role of CIOs and the organizational mindsets required to prosper in dynamic digitalized environments. She has a passion for disseminating theoretical knowledge to practitioners, collaborating with practice and facilitating digital change processes in organizations. Pernille lives with her family in Aalborg, Denmark.

Henrik Amsinck is CIO, Senior Vice President for Corporate IT, and member of Corporate Management in the LEGO Group. In his role as CIO, Henrik leads the digital business transformation at the LEGO Group by inspiring, challenging and supporting stakeholders on their digital journey. In 2014, Henrik was awarded the IT decision maker of the year by fellow CIOs in Denmark based on his relentless effort to maximize the business proximity of the LEGO IT organization. Moreover, Henrik executes a solid platform strategy with focus on scalability and adaptability designed for an organization expanding globally. Henrik holds a Master of Science in Economics from Aarhus University and lives with his family in Aarhus, Denmark.

Anders Lerbech Vinther is Head of CIT Strategic Business Development in the LEGO Group. Being a member of the CIO’s leadership team, Anders drives the Corporate IT business planning and strategy deployment to maximize the long-term value of the LEGO Group’s operating model using IT. He also identifies and conceptualizes strategic trends and opportunities at the interface between IT and Business that shape the digitalization initiatives of the LEGO Group. Finally yet importantly, he acts as strategic sparring partner to the CIO on executive matters. Anders holds a Master of Science in Economics and Business Administration from Aarhus University and lives with his family in Vejle, Denmark.

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Section I: What does Digital Leadership Really Mean?

A most recent July 2015 article by the strategy consulting firm McKinsey & Company makes the banal but yet startling observation that while companies are rushing headlong to become more digital, executives have very diverse perspectives as what “going digital” really means. They range from focus on technology, to digital customer engagement, and new digital business models, and more. This lack of alignment and lack of common integrative vision often results in piecemeal initiatives, missed opportunities, and false starts in what some call the “digitalization” of the enterprise. The term digitalization is not yet commonly found in English dictionaries and is in use mainly in Europe, and especially Scandinavia. It goes beyond the use of digital platforms and taking advantage of their specific affordances, but rather reflects the way that digital media and platforms influence the restructuring of the many and diverse domains of economy, society, and culture.

In the corporate environment the IT analyst firm Gartner uses the digitalization concept as the process of moving to a digital business and the use of digital technologies to change business models and value-producing opportunities. It also heralds it as a new era for enterprise IT in which business innovation and IT innovation are more integrated and in which there is a flip in Corporate IT from a legacy perspective to a digital perspective – suggesting that there is a critical need for digital leadership.

Similarly a recent Summer 2015 Sloan Management Review article that surveyed 4800 management professionals confirmed that the keys to successful digital transformation (the North American more common term for digitalization) is more about strategy, culture, and talent development than it is about technology issues. Furthermore the survey uncovered that there was much apprehension by the respondents about whether their company’s leadership had the capabilities to lead the organization in a digital environment.

So, clearly there has been much recent emphasis on the criticality of digitalization of the enterprise and the digital leadership requirements that it brings, but there is also apprehension about the enterprise capabilities for digital leadership, as well as diverse perspectives about what it is. So what does effective digital leadership really mean, what enterprise capabilities does it require, and how do we build and reinforce its foundations? We set out to first clarify what digital leadership might entail in a digitally-intensive world in a way that was not “pie-in-the-sky” and was operationally grounded. We draw on the

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observation made by the leadership scholar Warren Bennis on the difference between management and leadership: Leadership is about doing the right thing for the success of the organization, while management is about doing the thing right. We adopt the spirit of this distinction to define digital leadership for the enterprise as doing the right things for the strategic success of digitalization for the enterprise and its business ecosystem. We add the business ecosystem to the scope of the enterprise in our definition as in this connected world it is not possible to achieve strategic success independently of the business ecosystem. We are not suggesting that management of digitalization is not important by emphasizing digital leadership, but only that focusing on the right things is a precursor to doing things right.

There is no common consensus or comprehensive articulation for the operational aspects of digital leadership in either theory or practice. However, we do know the scope of some of the foundational aspects of strategy and organization that might have to change in order to achieve the strategic success of digitalization:

- A Different Kind of Business Strategy: Digital technologies are becoming fused into the very fabric of the business and we need to enlarge our concept of business strategy to include digitalization. We need to supplement the prevailing view of IT strategy from a functional-level strategy that is aligned to an enterprise’s chosen business strategy but always subordinate to it with an enterprise-wide digital one that reflects a fusion between digital strategy and business strategy—sometimes termed digital business strategy. Furthermore, in digital business ecosystems with high connectivity, business development often occurs in collaboration with partners who together leverage ecosystem platforms to co-create value around products and services.

- Different Kinds of Business Models: Integrated digital business strategy and collaborative ecosystem platforms enable new forms of business value and ways of creating them around digital business models. These new digital business models often have different value propositions and different revenue-sharing modes. They often also bring together both physical and digital features of products and services.

- A Different Kind of Enterprise Platform Integration: With the intensive interactive digital connectivity to the outside there is a need for integration between the outside and the inside of the enterprise that goes beyond the traditional ERP and supply chain management integration.

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7 Bennis, W. On Becoming a Leader, Addison-Wesley, 1989.
paradigm. We are headed towards an age of adaptive and dynamically responsive digital platforms\textsuperscript{13} and accompanying organizational arrangements.

- A Different Kind of People Mind-Set and Skill Set: All the above will require a different mindset from both the top management team and the entire ranks to be more adaptive and be willing to experiment and innovate while occasionally failing\textsuperscript{14}. It also requires people to develop or have an appropriate adaptive skill set and digital knowhow, and for those mindsets and skill sets to be continuously disseminated through the enterprise.

- A Different Kind of Corporate IT Function: It goes without saying that all these strategy and organizational changes for digital leadership of the enterprise will require rethinking the role of the corporate IT function and the CIO.

- A Different Kind of Humanized Workplace: As more born-digital younger employees enter the workforce with different values, their generation will have different expectations of the workplace in terms of flexing of location and time, sophistication of mobile online access, and the extent of humanization of the workplace. Rethinking the humanized workplace of the future as digitalization increases is especially a key priority in Scandinavia.

So, while the field has ideas about the scope of the foundational aspects of strategy and organization that might have to change in order to achieve the strategic success of digitalization in this coming age, how can we further operationalize and describe those aspects? We know they will have to be different, but in what way and how? What are their distinctive characteristics? What are the requisite capabilities that an enterprise needs to develop for digital leadership in organizational transformation? What digitalization moves does it need to make in order to develop those capabilities? How does such a vision emanate through the top management team and within all ranks? What kind of changes to the Corporate IT function and the role of the CIO are needed? How do we build the foundations for augmenting the enterprise capabilities for digital leadership?

We draw on the case example of the LEGO Group in Denmark and its decade-long digitalization journey to examine these issues and how they were dealt with – and to further understand how to build the requisite foundations and enterprise capabilities for digital leadership from this experience. In the early 2000s the LEGO Group went through a near-death experience when it strayed and lost it way. In 2004 it embarked on a major organizational transformation which was accompanied by a strategic digitalization initiative. In 2014 the LEGO group was the No. 2 toy company in the world based on annual sales and No. 1 based on growth and valuation, and it counts leveraging digitalization as one of its core strategic pillars. This is a digitalization story about a company that went from pain to gain.

\textsuperscript{13} Simons,P. The Age of the Platform, Motion Publishing, 2011.

Section II: The LEGO Group Context

The LEGO Group is a privately held, Danish family-owned company with headquarters in Billund, Denmark, and main offices in the USA, UK, China, and Singapore. It has factories in Billund as well as in Hungary, Czech Republic, Mexico, and soon China. It was founded in 1932 by Ole Kirk Kristiansen, a carpenter who started out making wooden toys. While now more than 15,000 employees worldwide, the company is still owned by the Kirk Kristiansen family. The company is based on the iconic LEGO brick, and it is one of the world's leading manufacturers of play materials for assembly. The name LEGO comes from the Danish phrase “LEG GODT” which means play well. Inadvertently, it turned out that one meaning of the word in Latin is “I put together”. LEGO products are sold worldwide in more than 140 countries and 85 million children (and many parents) had a fun, creative play experience with LEGO products in 2014. A brief graphical LEGO product history is shown in Figure 1.

2014 revenues for the LEGO Group www.lego.com were 28.6 billion Danish krone (DKK) which translates to over US$4 billion. Net profit in 2014 was 7 billion DKK (over $ 1 billion). In 2014, it was the No. 2 toy company in the world based on annual sales. However, the LEGO group was ranked No. 1 based on valuation, profits, and growth and has surpassed both Mattel and Hasbro. All the LEGO Group’s market regions experienced double digit sales growth while the traditional toy market in most countries grew by low single digit rates\textsuperscript{15}. After its major organizational transformation in 2004, the LEGO group has enjoyed almost a decade of consecutive growth. The LEGO brick was anointed “toy of the Century” by Forbes. To date more than 760 billion LEGO elements have been manufactured, and on average every person on earth owns 102 LEGO bricks. In 2014 the global production of LEGO elements exceeded 60 billion elements. 27 billion of these elements were made at the Billund factory translating to 52,000 every minute. 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. Children are not viewed as customers but as role models to be developed. Or stated more elaborately, the 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.” LEGO Education, which is a part of the LEGO Group (www.LEGOeducation.com) delivers teaching solutions for students in preschool, elementary, and middle school that increase engagement and also help teachers enable impactful learning. They develop

Figure 1 – Brief LEGO Product History

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children’s social skills and ability to collaborate, ignite curiosity and critical thinking in STEM topics, while using skills they need for a digital future. In 2014, 10 million children around the world were reached through LEGO Education activities.

The LEGO Group owner family has entrusted 25% of the ownership of the LEGO Group to the LEGO Foundation (www.LEGOfoundation.com) in order to secure its activities for the future. The LEGO Foundation focuses on redefining play and re-imagining learning to prepare children with the requisite skills for the 21st century. It works with stakeholders around the world to put quality early childhood education through playful learning on the global agenda for millions of children through programs that ensure that the fundamental value of play is understood, embraced and acted upon.

**Figure 2 – The LEGO Group Organizational Wheel**

![Organizational Wheel](image)

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**The LEGO Organization:** The “wheel” (See Figure 2) is the way that the LEGO Group visually depicts its organizational structure. It is the LEGO way of reducing silos and emphasizing communicating and sharing of knowledge and insights, as well as making decisions in plenum. In addition to an external Board of Directors, the LEGO Group’s top management consists of a Management Board of 5 people at the Executive VP level including the CEO, and a Corporate Management team of 21 people at the Senior
VP level. Four core business areas are represented in the Management Board: Operations, Market Management and Development, Product and Marketing Development, and Business Enabling. The CIO and Senior VP for Corporate IT is part of the Business Enabling area. As Figure 2 depicts, the Management Group circle all the areas together which form the wheel that runs the LEGO Group, and they communicate often across areas as part of the transparent communication culture in the company. They also all meet together regularly once a month.

**LEGO Values and Culture:** The LEGO culture is based on openness and trust, and core values are creativity, imagination, fun, learning, quality and care [http://www.lego.com/da-dk/careers/our-culture](http://www.lego.com/da-dk/careers/our-culture). Since its founding and continuing till today, the LEGO Group’s top managers have consistently expressed concern for maintaining the values and beliefs for which the brand stands. Their value-driven management style and willingness to be transparent is something that resonated initially with Danish citizens, but now is shared with the more than 50 nationalities that work at the LEGO Group. The founder’s motto of “only the best is good enough” is still very much alive and applied in all aspects of the LEGO Group. Whether through providing children with play experiences of the highest quality or maintaining safety standards, the LEGO Group strives to uphold that motto. For example, in 2014 there were zero product recalls for the 5th year running. The company also strives to be a responsible business and has taken sustainable operation measures and committed to producing more renewable energy than it consumes by 2020 through considerable investments in wind parks. To practice what they preach, playfulness is always an important element of the LEGO Group’s business and management and important for continuous innovation and invigoration. As LEGO 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 LEGO Group Transformation Journey:** While we have painted a rosy picture in 2015 for the LEGO Group, it was not an easy journey to get there, and the company experienced a near-death experience in the early 2000s when it verged on defaulting on its debt. Trouble had been brewing for a number of years but became very apparent in 2003. Production costs were spiraling up as the LEGO Group was manufacturing in Europe and the US, and the competition was manufacturing in

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17 We have constructed our interpretation of this crisis from a number of documentary sources that include “LEGO CEO Jørgen Vig Knudstorp on leading through survival and growth,” *Harvard Business Review*, January 2009; Robertson, D. & Breen, B. *Brick by Brick: How LEGO Rewrote the Rules of Innovation and Conquered the Global Toy Industry*, Crown Business Books, 2013; and [http://www.internationaltradenews.com/interviews/we_lost_the_focus_on_the_bricks](http://www.internationaltradenews.com/interviews/we_lost_the_focus_on_the_bricks) Interview with Roar Rude Trangbaek, Press officer of the Lego Group, 2014.
Asia at much lower cost. The toy market had become more fickle with new electronic games. The LEGO Group, trying to seize on disruptive innovations, had diversified into adjacent markets too quickly: amusement parks, video games, toys for infants, clothing, and new areas they had little experience in. It almost seemed like the company “lost faith in the brick” and their identity as a company and what they were really good at: creating great LEGO sets based on the LEGO brick. As the LEGO Group’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. So we had a lot of knowledge silos within the organization. We lacked a clear insight in which areas were run inefficiently and in which areas we were losing money.” Financially, the company had experienced losses, revenue drop, and negative cash flow for several years - and a risk of debt default was a looming reality. A major organizational transformation was needed and a new business strategy to save what some had called a burning platform.

The transformation was set off by a replacement of the CEO in October 2004, when 35 year old Jørgen Vig Knudstorp, who had initially joined the LEGO Group as a business strategist in 2001 from McKinsey&Company became CEO. In the beginning of the transformation it was a matter of surviving, and Knudstorp initiated a two-pronged strategy based on production cost reductions and closing non-profitable product lines and a clearer focus on the core brand and identity. Supply chain, manufacturing, and distribution was fixed. 2005-2007 were characterized as stabilizing years for building a defensible core of products. Product lines that were not profitable nor core were shut down, and there was rebalancing of capital structure. LEGOLAND parks were sold to Merlin entertainment. The company downsized from 8500 to 5000 employees. Open communication about problems was encouraged and practiced. A 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. Collaboration with partners and ecosystem was seen as critical, and there was a realization that others were more expert in areas that were not core to the LEGO Group. For example, the company partnered with video game design companies to design video games. 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. Aspects of core manufacturing that had started to get outsourced were brought back in-house. While the Corporate IT department had been supporting the recovery, stability and growth of the company through enterprise systems all along, there was a realization of the growing importance of digital platforms for the LEGO Group. A new CIO Henrik Amsinck was brought on board in late 2007, and very
soon an enterprise-wide digitalization initiative was under way. By 2009, leveraging digitalization was a critical strategic priority at the LEGO Group.

**Figure 3 – The LEGO Group Strategy**

[Diagram showing four strategic priorities: Expand global presence, Leverage digitalization, Sustain core commercial and operational momentum, Create the organization of the future]

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**The LEGO Group Strategy:** The crisis that the LEGO Group underwent in the early 2000s and its ensuing ten-year transformation has kept the company focused on its long term vision and strategy – which it has pegged to its 100 years anniversary horizon in 2032. The LEGO Strategy is to further globalize and to innovate the LEGO system in play through four key strategic priorities shown in Figure 3. The LEGO Group aims to sustain the growth of its core business -- the physical LEGO play -- catering to children aged 1.5 – 11 years through development of great products within their existing product lines, while also developing new product lines. There is constant and continued push for improvements in procurement, production, and marketing. Secondly, the LEGO Group seeks to continue to expand its global presence both in terms of factories and offices while especially focusing on emerging markets such as China. The LEGO Group’s third foundational element of business strategy is to leverage digitalization for its core business to make it even more attractive and exciting by integrating physical and digital play, while also taking advantage of e-commerce, digital marketing, enterprise systems, and social media. Finally, the LEGO Group has a long term vision to create the highly adaptive organization of the future to meet competitive challenges, and build required stewardship of the environment, governance, and social responsibility. Those four key priorities of LEGO strategy have been taken very seriously by LEGO top management and resources and initiatives have been put behind them. There are not very many brick-and-mortar companies in the world that explicitly articulate leveraging digitalization as one of very few core pillars of business strategy and it has been on the top management strategic agenda since 2009.

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How did the LEGO Group move forward with its digitalization efforts in the midst of this organizational transformation? How did it develop its capabilities for digital leadership? How did it lay and build the foundations for digital leadership into the future? How did it learn how to do that? It practiced what they preached regarding the learning and mind shifting benefits of the active LEGO brick assembly experience with children. The LEGO CEO 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 the LEGO Group developed the capabilities for digital leadership by attempting multiple (but focused) digitalization moves and learning through the experience. We describe those digitalization moves in the next section.
Section III: Digitalization Moves at the LEGO Group: Acting Its Way into New Ways of Thinking about Digital Leadership

As it set forward in its digitalization efforts the LEGO Group used three lenses for leveraging digitalization: a “Products” lens which centered around product innovation and the product ecosystem, a “Marketing” lens around digital marketing, and an “Enterprise” lens which centered around enterprise platforms and integration of the outside and the inside of the enterprise. Over the years, the LEGO Group had several digitalization initiatives in each of these three focus areas or what we have called digitalization “moves”. We have selected 10 of these moves. They are listed below and we exposit and examine each of these in turn.

10 Selected Digitalization Moves at the LEGO Group

III.A) Digitalization Moves around Products
- Digitalization Move #1: Combining Physical and Digital Play in Products
- Digitalization Move #2: Crowd-Sourcing Innovation and Developing LEGO Community Platforms

III.B) Digitalization Moves in Marketing
- Digitalization Move #3: Omni-Channel Marketing
- Digitalization Move #4: Increased Digital Engagement with the LEGO Community
- Digitalization Move #5: Globalizing Digital Assets

III.C) Digitalization Moves around Enterprise Platforms
- Digitalization Move #6: Bolstering the Enterprise IT Platform
- Digitalization Move #7: Designing a Complementary Engagement Platform
- Digitalization Move #8: Restructuring the Corporate IT Organization for Business Responsiveness
- Digitalization Move #9: Orchestrating Distributed Digital Innovation with Multiple Digital Officers
- Digitalization Move #10: Building up the Digital Workforce and the Digital Work environment in Corporate IT

III.A) Digitalization Moves around Products

Digitalization Move #1: Combining Physical and Digital Play in Products
LEGO products are designed around bricks, learning, and play. While still keeping the focus on the core physical building with brick, the company has added digital components that combine physical and digital play. The first hybrid digital/physical LEGO experience was LEGO MINDSTORMS® in 1998 which is a robotics platform created in collaboration with MIT’s Media Lab. This was targeted for an older segment. A month after LEGO MINDSTORMS® was launched, the LEGO Group 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, the company realized that opening up could create a much stronger community of users and become a source of additional value. Instead of prosecuting the hackers, the LEGO Group asked themselves: “Why would someone hack our system?” When talking to the hackers, the company found out that they were LEGO fans who wanted to build their own creations. As a result, the LEGO Group 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, the LEGO Group has launched numerous digital platforms to strengthen the company’s connections 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.

Since 1998 and the launch of LEGO MINDSTORMS® numerous product lines combining the physical and digital play experience have been launched and the LEGO Group 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. In late September 2015, LEGO Dimensions will be launched and it is an action-adventure video game for popular consoles (Sony PlayStation, Nintendo Wii, Microsoft Xbox) which includes many characters from 14 different LEGO franchises after a masked villain descends into multiple worlds. It combines the physical and digital in that the player has LEGO figures and a gateway built with bricks which can be played within the game. It is developed in collaboration with TT Games and distributed by Warner Brothers.\textsuperscript{19} The percentage of these hybrid products is expected to continue to grow at an increasing rate, but the digital component is seen as just an extra experience layer. All these new hybrid products are part of the digitalization initiative at the LEGO Group while never losing focus on the core business of bricks.

**Digitalization Move #2: Crowd-Sourcing Innovation and Developing LEGO Community Platforms**

The LEGO Group has always designed its products together with children to try to ensure that they are loveable products, and the advent of digital platforms has only made it more so.\textsuperscript{20} In 2008 it launched LEGO Ideas \url{https://ideas.lego.com} which is a website where amateur designers share their ideas for

\textsuperscript{19} Readers of this manuscript with playful learning passion can watch the trailer video at \url{http://www.lego.com/en-us/dimensions/videos/lego-dimensions-official-announce-video}

new LEGO sets, and fans then get to vote on them and give them “likes”. The website has about half a million visits per month, and has over 100,000 registered users. Any project proposal with over 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 launched. Crowd-sourced LEGO sets (for example The Big Bang Theory Apartment set) do as well in the market as standard sets. Furthermore, the LEGO Ideas website serves to monitor trends and changing interests among LEGO set builders and fans. The website also serves to mobilize communities for user-designed projects, as well as deepens the connection between the users and the company. The crowd-sourcing used for new product development has added an army of designers in the thousands to the 200 in-house product designers, and there have been successful crowd-sourced products. The LEGO Group has also created several community platforms for children. LEGO® Club with 5 million registered users offers content and tools to stimulate the creativity of children aged 4-13. My LEGO Network [www.mln.lego.com](http://www.mln.lego.com) is a safe social networking site for children where they can share their LEGO creations. ReBrick is a sharing platform designed for users 13+ years, or Teen Fans of Lego (TFOL) [www.rebrick.lego.com](http://www.rebrick.lego.com). Projects are created outside of brand-implemented tools and published on independent platforms such as blogs or Flickr. The official LEGO website [www.lego.com](http://www.lego.com) also serves as an engaging family website for 18 million visitors per month around the world. There are also a growing number of Adult LEGO User Communities (AFOLs or Adult Fans of LEGO) who have their own websites, blogs, and discussion forums. The 220+ LEGO user community groups each have a representative that is part of the LEGO Ambassador Network which serves to nurture the relationship with the LEGO Group. All this furthers the digitalization of the company around product design and community building for the future.

### III.B) Digitalization Moves in Marketing

There is a lot of overlap between marketing and managing the product experience in a digital environment, as 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. The LEGO Group has divided its market constituencies into customers (the designation used for its retailers such as Target, Walmart, and Amazon), shoppers (the designation used for adults such as parents and grandparents who buy LEGO products for children), consumers (the designation used for those who play and learn with LEGO products which are in most
cases children), and finally fans (the designation used for core adult and teenage fans who are both shoppers and consumers). Thus, the digitalization moves in marketing address all four constituencies in different ways.

**Digitalization Move #3: Omni-Channel Marketing**

Reaching out to the customer requires omni-channel marketing in a digital environment, thus using different kinds of digital channels as well as physical channels. LEGO products have physical presence in retail stores, and the company also runs a number of LEGO stores, as well as the brand presence created by several LEGOLAND parks and LEGOLAND Discovery Center and very active “Brick” conventions around the world, that are often not arranged by the LEGO Group, but by AFOLs. In its digitalization efforts, the LEGO Group has stepped up the use of various digital channels. It has stepped up the use of social media, the company flagship website, and websites specially designed for fan groups. The LEGO Group has also started using interactive story telling within “trailer” online games to engage with fans around new characters in LEGO sets to engage children. The company has also created an augmented reality product catalog, in which a product box can be scanned with a downloadable mobile app and an animated rendition of the construction set being assembled to completion is instantly displayed. The LEGO Group has also realized that required cycle times are very fast for producing interactive digital content for marketing and while there is an internal ad agency within the company, it has also sought to partner with external digital ad agencies to speed up marketing digitalization efforts.

The LEGO Group has also partnered with Warner Animation which released The LEGO Movie® [www.thel legomovie.com](http://www.thel legomovie.com) in 2014. It is an animated adventure comedy film based on LEGO construction toys and became a $486 million global blockbuster. The LEGO Group received royalties for the use of their brand and the film’s intellectual property rights, but most importantly the collection of sets that the LEGO Group launched in connection with the movie was extremely successful in terms of both revenue and most importantly greatly increasing brand affinity with families. Two sequels have been announced for 2017 and 2018. In 2015, while Apple retained its top spot as the world’s most valuable brand, LEGO topped global rankings of the most powerful brands with *Forbes* citing the bump from the LEGO Movie®. The LEGO Group continues to discover new ways of using digital marketing channels and collaborating with marketing partners as part of its digitalization.

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Digitalization Move #4: Increased Digital Engagement with the LEGO Community

Increased engagement with a customer community drives innovation and revenue growth. The LEGO Group has moved vigorously to engage with the LEGO community at different levels, and digital engagement around LEGO community platforms (mentioned earlier) has helped bolster that. The affinity pyramid (see Figure 4) suggests that the more digitally and directly connected members of a community are with an organization and the members of the community, the more likely they are to engage in providing information, in having two-way dialogue, in collaborating with each other, and in co-creating products. The LEGO Group has committed considerable resources to maintain a culture of engagement for its community, and has encouraged them to move up the affinity pyramid. The company also continuously measures its customer experience through a Net Promoter Score in which customers are asked to rate their experience in real time on the web. Furthermore, the more they move up that affinity pyramid through digital engagement, the more effective personalized and micromarketing has become, and the company has used micromarketing data to better understand the path to purchase of its digitally-connected customers and fans.

Figure 4 – The Affinity Pyramid Engagement Map

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Digitalization Move #5: Globalizing Digital Assets

The LEGO Group has continuously increased its intellectual property of new characters and franchises that have been hits such as Chima and Ninjago, balancing its own IPs with externally licensed IP rather than resort to licensing deals. Furthermore as combined physical and digital play has increased, the number of digital assets that the company has created to portray toys has increased also. So 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 around the world. This has brought up challenges of global governance around those digital assets and has highlighted a new dimension of digitalization in marketing that the LEGO Group is learning about through this global deployment.

III.C) Digitalization Moves around Enterprise Platforms

The digitalization moves in product ecosystems and in marketing with partners have put new demands on enterprise systems and platforms and on the Corporate IT function at the LEGO Group. These digitalization moves have required platform attention for requests for applications and functionality that have grown from 5% to 30% of the Corporate IT portfolio, and that growth is expected to continue. The moves have also prompted the Corporate IT function to rethink the architecture of its enterprise platforms to meet these 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 idea of having two different enterprise platforms: a traditional one for transactions and second generation one for interactions and engagement.

Digitalization Move #6: Bolstering the Enterprise IT Platform

Developing and bolstering the existing LEGO Enterprise IT platform has been a long journey dating back to 1999. In 1999 the LEGO Group wanted to consolidate and increase the efficiency of business processes and a “one company – one system” new mission was formulated. A company-wide ERP project was launched following four principles: simple, global, consistent and standardized work-processes. In late 2001, the LEGO Group had a global enterprise-wide ERP system based on the principles supporting 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, and identified areas for providing business units with better IT systems support.\textsuperscript{22} Despite the implementation of standardized processes globally, in 2004 there was a lack of flow of information inside the company. The LEGO Group had many silos and lacked visibility into which areas were running inefficiently and which areas were losing money. And in accordance with the action plan of the new CEO Jørgen Vig Knudstorp, the period 2004–2007 was characterized by continuously improving the enterprise system platform, stabilizing the organization, streamlining processes and improving data sharing and business intelligence capabilities to create transparency and visibility about operations (for example which product lines were profitable and which were not). The new CIO Henrik Amsinck who joined the LEGO Group in 2007 was pleasantly surprised by the robust state of the LEGO ERP platform. But as he quickly discovered, there was still very much work to be done in the ensuing years as the effects of digitalization at the LEGO Group started to have major impacts on enterprise IT platform requirements.

**Figure 5 - Phases in Bolstering the LEGO Enterprise Platform for Digitalization**

![Phase 1 (1999-2004)](image)

**Phase 1 (1999-2004)**

ERP Standardization: simple, global, consistent and standardized work-processes

![Phase 2 (2004-2007)](image)

**Phase 2 (2004-2007)**

Transparency & Visibility: improving data quality, flow, sharing, and business intelligence

![Phase 3 (2007-2014)](image)

**Phase 3 (2007-2014)**

Building the “Hangar Ship”: enhancing both operational excellence and digital engagement

![Phase 4 (2015-)](image)

**Phase 4 (2015-)**

Designing the feasibility of a separate but complementary Engagement Platform

In the ensuing years from 2007 there were continued efforts to bolster the enterprise platform in many ways to support operational excellence including knowledge sharing, collaboration, and supply chain management. The LEGO Group continued to enhance its business process management capabilities and sharing knowledge around processes “the LEGO way”, and in 2013 was recognized with the Gartner Business Process Management Excellence Award.

However, there were other factors that influenced the evolution of the enterprise platform at the LEGO Group due to changing employee expectations around digitalization. The consumerization of enterprise IT started to take hold as employees’ experiences as consumers influenced their expectation of ease of

\textsuperscript{22} Some of this history up to 2004 is in Rikhardsson, P. C. Møller, P. Kræmmergaard *ERP: Danske Virksomheders erfaringer med Implementering og Anvendelse (ERP: Danish Experiences with Implementation and Use)*, in Danish, Copenhagen: Børsens Forlag, 2004.
use of applications, friendly intuitive graphical user interfaces, and simplicity. The world of “apps” and smartphones was in full swing, and employees wanted more than the standard cluttered ERP interfaces. LEGO Corporate IT augmented the enterprise platform with personalized end-to-end “app” experiences for employees with simple graphical interfaces where the employee only gets the apps that he or she needs in their tasks according to their individual jobs. LEGO Corporate IT has thus managed to deliver personalized ERP functionality on employee smartphones. LEGO Corporate IT’s philosophy is “what you see is what you need” rather than “what you see is what you get” and each app serves its own individualized use. In order to nurture those employee demands, the company changed their application development process to have 100% user involvement before development using collaborative prototyping tools with visualization such as iRise. The benefits that ensued are shown in Figure 6. Certainly the more the employees use the enterprise system (say for work travel expenses) the more efficient the company business processes become.

**Figure 6 – Benefits of Augmenting the Enterprise Platform through App user involvement**

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The increased connectivity with customers whether through the LEGO website, online shops, community groups, LEGO fan clubs, social media, etc. has also increased the need for increased digital engagement which put many new demands on the enterprise platform. Similarly all the digitalization moves for product ecosystems as well as those for marketing (outlined in Sections III.A and III.B above) placed further demand on the IT organization as well as on the enterprise platform. The enterprise platform was growing in multiple directions and now had started to become like a humungous “hangar
ship” which housed all applications whether those related to operations and transactions, or those related to consumer digital engagement and interaction.

As time went on there was a growing realization that application development in traditional enterprise applications and digitalization applications were very different. The business priorities in traditional enterprise platforms are first cost, then quality, then reliance, then time. In digitalization platforms the business priorities are different. Time has become the highest priority as flexibility to release new business functionality becomes a competitive advantage. Then reliance is a close second as in a digitalization environment (such as an online store) a failure of technology cannot be compensated by manual workarounds of processes (as in a physical store). The third priority is quality. Quality is still regarded as a key requirement in areas such as security, but it becomes less important in the presentation layer as the users become part of the testing and prototyping process. Cost has now become the last priority. Furthermore, development practices are much more fluid and there are less established industrial-strength development practices in digitalization applications corresponding to the ones shown in Figure 7. And the requisite delivery model and characteristics were also very different. Should there be separate enterprise and engagement platforms? Eventually, it became clear that the answer was a resounding yes.

Figure 7 – Traditional Industrial Strength Development Practice for Enterprise Platforms

![Traditional Industrial Strength Development Practice for Enterprise Platforms](image-url)

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Digitalization Move #7: Designing a Complementary Engagement Platform

It became evident despite the repeated attempts to bolster the IT enterprise platform with interactivity, intuitive user experiences, and fast response in adding new functionality – that it was an uphill battle. As we mentioned above, there was a growing realization that application development in traditional
enterprise applications and digitalization applications were very different, and a separate engagement platform was needed. The engagement platform would be complementary to the enterprise platform and would co-exist like a brother and a sister, or perhaps more appropriately given their complementarities would be like the ying and yang of the platform world. Fortunately in 2015, API (Application Programming Interfaces) technology is sufficiently advanced that the two platforms can be loosely and dynamically connected even as the engagement platform changes quickly.

The enterprise platform is typically a rock-solid carefully designed and thoroughly tested platform. It is built around transactions and records, its architecture is tightly integrated, and its requirements are carefully specified ahead of time. It is not easy to add functionality to it quickly and in an ad-hoc manner and its integrity is guarded like the crown jewels as all enterprise operations depend on it. However the new customer and partner demands from digitalization had a very different set of requirements: digital interaction, 24/7 availability even as changes are made, user driven experience, experimentation, quickly-added functionality that was good enough to start, and a two way real-time dialogue with the user through a simple intuitive interface. It was clear that a different engagement platform was needed and the two platforms could not be tightly coupled but that they had to co-exist. It was also clear that that open architecture, micro-services and APIs would drive the architecture of the engagement platform and it would have loose-tight connectivity to the enterprise platform. The engagement platform and its governance mechanisms are in advanced design at this writing, and the conceptual idea behind it is shown in Figure 8 and contrasted with the enterprise platform.

**Figure 8 – The Ying & Yang of Enterprise and Engagement Platforms**

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The key dimensions in the figure are the extent of architecture governance exercised, and the speed of change of the system. The expectation going forward is that this new design will result in 75% decrease in time for delivering functionality and 3x staff productivity as per function point calculations using scrum/agile development methods. Clearly, the engagement platform is suited and needed for customers and their digital interactions if digitalization is to be effective.

Digitalization Move #8: Restructuring the Corporate IT Organization for Business Responsiveness

Due to the rapid growth in revenue and the strategic need for increased digitalization, the LEGO corporate IT organization has expanded its staff by 100 people in the last three years to more than 450 employees. The majority of the IT staff has historically been located at LEGO headquarters in Billund and at the Enfield hub in the US. This practice is slightly changing, as the LEGO Group has established new major office hubs in London, Singapore and Shanghai, and IT staff are now employed with physical affiliation to these new hubs expanding IT presence in every major site of the company. This transition kick-off date was January 2015, and Corporate IT expects many new colleagues (approx. 50) at the new hubs before the end of 2016. Corporate IT prefers to keep the competences to develop the core enterprise platform components in-house and in Billund and Enfield. The physical proximity to the rest of the organization helps the IT staff appreciate, understand, and share their colleagues’ business challenges. The IT staffers live and breathe in an open office environment replete with assembled products that range from Ninjago Master Wu Dragon sets to Star Wars Millenium 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. Everything is done to remind IT staffers that they are LEGO employees first and IT employees second.

With rapid and increased digitalization, and changing needs from customers and the lines of business, the pressure has constantly mounted for Corporate IT (CIT) to be nimbly responsive to the business. In order to be more effective in supporting the dynamics of the business, the IT organization has been restructured to mesh more closely with the business. CIT is now organized into four line functions -- three working directly and very closely with the business: CIT Business Enabling, CIT Marketing and CIT Operations and one more internally oriented function, CIT Technology and Security (See Figure 9). Each of the three business-oriented application areas has its own CIO, and the technology oriented Infrastructure and Operations area has a CTO. This allows CIT to be led by one Executive CIO who can

23 For less business-facing tasks, LEGO has outsourced application maintenance to HCL in India. As a strategic partner to LEGO, HCL operates the LEGO specific Offshore Delivery Center consisting of more than 150 full time external consultants.
then spend more time focusing on strategy and digitalization, and who together with the head of CIT Strategic Business Development (a function established in 2014) co-created the driving ideas for the new architectures of enterprise platforms and the development of the digital workforce.

**Figure 9 – Configuring Corporate IT for Business Responsiveness**

Besides delivering IT solutions to the Business Enabling organization, CIT Business Enabling includes internal user experience management, business intelligence solutions and data warehousing, as well as the CIT staff functions that encompass internal user experience management, business process management, vendor management and portfolio management. CIT Marketing supports the product development, marketing and sales part of the business and includes CRM, e-commerce, digital marketing, and customer front-end management. CIT Operations supports manufacturing, procurement, and supply chain management. CIT Technology and Security is focused on the enterprise architecture, core systems infrastructure and hosting, security as well as the global service desk and local end-user support. Apart from this organizational structure, there is a high degree of cross-functional collaboration within CIT and between CIT and the business. There has been a conscious effort to move from the traditional “plan-build-run” requirements-focused model of systems development to a joint collaboration for solution finding together with the business units, and the realization that a very rapid and agile response is typically needed. CIT has also increased collaboration with external partners who bring special expertise given the increase in products that have a digital component as well as digital games.
Digitalization Move #9: Orchestrating Distributed Digital Innovation with Multiple Digital Officers

As products and services are increasingly offered through digital platforms in multiple industries, we are seeing the emergence of the role of Chief Digital Officer (CDO) in addition to the CIO role. The CDO is typically closer to the product experience than the CIO and manages the customer engagement part of the platform as well as the generation of value around the digital product platform. So for example, some digital entertainment companies will have a CIO to manage enterprise platforms and a CDO to manage the content platform, creating value around it, and managing how people search for and consume digital entertainment content. The CDO will also monitor and manage the introduction of new technology innovations around the content platform. The LEGO Group reached a different conclusion in order to manage digital innovation: rather than have one CDO, why not develop numerous digital officers in the different business areas? The CIO and his team came to the conclusion that digital innovation and technological advances that impacted the different areas of the enterprise were becoming too numerous and overwhelming for Corporate IT to manage by itself and that they should be distributed throughout the enterprise closer to the specialized expertise. Thus, the LEGO Group has a Digital Games Officer in the marketing area who monitors and manages digital innovations and solutions for digital (online) games, then works together with Corporate IT to implement platform solutions for digital games. And the LEGO Group is continuing the creation of digital officers in a growing number of business areas (see Figure 10). Simultaneously this is increasing the digital savvy and proactive initiative of the business units, as well as their ownership of the resultant digital solutions.

Figure 10 – The Rise of Multiple Digital Officers across the Enterprise

See for example [www.mckinsey.com/insights/organization/what_it_takes_to_build_your_digital_quotient](http://www.mckinsey.com/insights/organization/what_it_takes_to_build_your_digital_quotient)
The rise of multiple digital officers is also changing the way that digital innovation occurs at the LEGO Group. It is becoming more effective because it is distributed closer to the point of expertise. The relationship between the business units and CIT around digitalization has changed (see Figure 11). In the past, the CIO and CIT managers were in an order taking mode, where a business unit came with their requirements for a system to solve a problem, and CIT provided the solution and provided the platform and technology innovation. The CIO was order-taker, “traffic cop” and solution provider. Now, the business unit proactively discovers the digital innovation in their area, and picks a solution, then discusses it with CIT as a partner, who then help integrate the solution into the existing enterprise platform (and in the future into the engagement platform as appropriate). The CIO and CIT now play the role of solution-taker, partner and platform-integrator. In order to thrive in the dynamic and hectic environment that is required for digitalization in the midst of organizational transformation, distributed digital innovation is a more effective path.

Figure 11 – The Distributed Digital Innovation Process between CIT and Business Units through Multiple Digital Officers

Digitalization Move #10: Building up the Digital Workforce and the Digital Work environment in Corporate IT

An effective digitalization initiative requires conscious effort in building up the skill set and making mind-shifts in both the Corporate IT workforce and the entire LEGO workforce. This is especially challenging for a legacy brick-and-mortar company like the LEGO Group where there are both traditional employees who have worked for a long time, as well as “born-digital” younger employees who are continuously joining the company.
The dynamic demand for new digitalization solutions resulting from the digital moves in the product areas and marketing (and which resulted in the emergence of an engagement platform - Digitalization Move #7) has changed the mix of work for CIT employees. They now spend more time with the business units, devising IT solutions, making specifications, and prototyping rather than traditional development and programming. Not only has the work itself changed, but the mindset within CIT is such that they are more willing to experiment, learn and take risks, and to have an external orientation. This in itself with coaching from CIT managers has changed the work culture, and the concept of VUCA (Volatility, Uncertainty, Complexity, Ambiguity) -- which comes from military field commander tactics -- has been discussed in CIT. So, there has been a conscious effort to change the mindset to fit with dynamic digitalization. Furthermore, there has also been a conscious effort to attune CIT staffers in particular and LEGO employees in general to collaborating with many external partners who bring complementary expertise. In 2015, informal chatter from partners suggests that collaborating with the LEGO Group is a pleasant experience that partners enjoy, and they report some of the playfulness of the LEGO culture.

CIT has changed its hiring policies to help the flexibility needed in dynamic digitalization. Previously, CIT hired for narrowly specified positions, and often hired highly specialized people. For the last 4 years people are hired into a career at the LEGO Group rather than a specialized job at LEGO CIT, and there is a high preference for people who are adaptable to task and position changes whether in LEGO CIT or other parts of the enterprise. Every year about 50 CIT employees are redeployed and change jobs within the company. This has resulted in CIT people getting wider exposure, and knowledge and expertise is spread more broadly, and the internal hiring ecosystem at the LEGO Group has a healthier supply of digital talent. The company also has a 24 month rotation program across CIT and the enterprise for new graduates, and an internship program for IT students in collaboration with Danish universities. The company has also increased its number of hires from “Silicon Valley”-like companies.

LEGO Corporate IT has also put a lot of effort into creating an interesting work place, often looking at exemplars in other industries in Silicon Valley for cultural insights. Various initiatives have been started to blend CIT employee development with workplace excitement. For example in 2013, LEGO CIT ran a two day digitalization boot-camp for young and recently hired graduates with participation from CIT management and some mid-level CIT employees. It was facilitated by a prominent consulting firm and covered both new digital trends as well as the organizational, cultural, ecosystem, partnering and customer challenges of digitalization.

These moves into building up the digital workforce and the digital work environment have paid off. In 2014 the LEGO Group ranked second to Google as being the most popular IT workplace in Denmark.
among IT graduates. Three years before the LEGO Group was not even in the top 100. Among IT people with five years of experience LEGO Corporate IT now ranks among the top five in Denmark.

III.D) Direct Impacts of the Digitalization Moves

In evaluating and thinking through the impacts of the LEGO Group’s strategy of leveraging digitalization in its recovery and growth, there are three sets of questions that we needed to ask:

- Question 1: Have the digitalization moves resulted in innovative products, new processes, and new types of relationships in the LEGO Group ecosystem, that did not exist at all in the past? What are the direct impacts of the digitalization moves?

- Question 2: Has the digitalization initiative and its various digitalization moves in combination helped the LEGO Group in its journey from pain to gain? In other words, is the LEGO Group and its ecosystem better off thanks to digitalization the way it has been done?

- Question 3: Has the digitalization initiative helped better position the LEGO Group for the future? More specifically, is the LEGO Group doing the right things for the strategic success of digitalization for the enterprise and its business ecosystem? In other words, has it moved the enterprise further on the road to digital leadership? Has the digitalization initiative helped build the foundations and the enterprise capabilities for digital leadership?

We answer the first two questions below and the third question in Section IV.

We believe that the answer to the first questions is an obvious yes. It is clear that combining physical and digital play has resulted in innovative products that did not exist in the past. It is clear that new processes and relationships that did not exist in the past with the customer ecosystem have been created through crowd-sourced new product development and digital engagement on LEGO community platforms. It is clear that new types of relationships with external partners have been created through omni-channel marketing and new types of platform requirements in Corporate IT. It is clear that new types of collaboration processes and relationships around digital innovation have been created between Corporate IT and the business units through the creation of distributed digital officers. It is clear that the creation of consumer-grade mobile apps around the enterprise platform has created new ways of employee interaction. Entirely new processes such as the global management of digital assets have been

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26 There are different levels of ambition in defining what constitutes digitalization. Most commonly it is viewed as the process of transforming the structure, processes, people skills, and culture of the entire organization to become able to use digital technologies to create and offer products/services and experiences that customers, employees, and partners find valuable. At the LEGO Group, the definition is more ambitious and beyond enhancing current processes and services, and about doing new things through digitalization that could not be done before.
created. Thus, the entire LEGO Group ecosystem of customers, partners, and employees has been beset with many innovations through digitalization. We also explained above in sub-sections for each of the 10 digitalization moves what direct benefits were brought by each move, and no need to repeat here.

We also believe that the answer is yes to the second set of questions about whether the various digitalization moves in combination have helped the LEGO Group in its journey from pain to gain in its multi-year transformation. The pain and critical problems that plagued the LEGO 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, and lack of flow of information and knowledge silos.

There is no question that the focus on the customer has soared during this multi-year transformation. Suffice it that the LEGO brand was the most powerful global brand in 2015. We cannot attribute that to digitalization obviously, but many of the digitalization moves explained earlier in this section that have focused around products and marketing have enormously enriched digital engagement and interaction with the customer ecosystem constituencies in numerous ways – and built brand affinity. The new modes of partnerships around digital media and digital games have allowed the LEGO group to stay focused on its core competencies. The bolstering of the enterprise platform and the proximity of Corporate IT to the business units as well as the creation of multiple digital officers for distributed digital innovation has broken down knowledge silos and smoothed information flow. The Corporate IT response to the exploding demand for new functionality from marketing and customer applications (now 30% of the Corporate IT portfolio) has helped integrate the ecosystem more closely with the enterprise, and will continue to do so with the engagement platform. The LEGO Group is now on a healthy growth path of increasing revenues and profits, and the digitalization moves in combination have contributed to this transformation. 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.

In the next section we try to answer the next third set of questions regarding how the digitalization initiative has helped position the LEGO Group better for the future, and how it has helped build the foundations and the enterprise capabilities for digital leadership. Apart from their direct impact discussed above, learning has also occurred through these digitalization moves. The company has acted its way into a new and more informed way of thinking about digitalization and the path to digital leadership. These new ways of thinking about digital leadership is what we first examine in Section IV.
The digitalization initiative and its various associated digitalization moves in combination have resulted in learning throughout the LEGO Group. This learning has brought new ways of thinking about the strategic success of digitalization and the requirements for digital leadership at the company. We have organized these into three buckets (See Figure 12):

- Enterprise Digitalization: new ways of thinking about issues of leveraging enterprise-wide digitalization and organizing around it for digital leadership
- Digital Platforms: new ways of thinking about platform requirements for enterprise-wide digitalization and its strategic success
- Digital Workforce: new ways of thinking about the workforce needed for digital leadership

Figure 12 – New Ways of Thinking about Digital Leadership at the LEGO Group

New Ways of Thinking about Enterprise Digitalization

1. **Execute Business Strategy Digitally**
   This statement seems trite at first, but it has a deep meaning. On June 25, 2015 a few days before most Danes go on their annual July summer holiday starting Week 28, Jørgen Vig Knudstorp the CEO of the LEGO Group put out an internal company blog entry to all employees with a subject line titled “No more digital strategy – executing strategy digitally” and wished them a great summer. What he meant was that there was no longer just a separate digital strategy that was aligned with business strategy but that the corporate business strategy itself was executed through digitalization. He illustrated the LEGO Group’s new way of thinking by
several examples. He likened it to the difference between an established taxi company’s cab hailing app and Uber [www.uber.com](http://www.uber.com) where digitalization has transformed the entire business model and the corporate strategy. He also likened it to designing an e-book that cannot be compared to anything that was available in hard copy book form with interactivity and personalization and other digitally-enabled unique features. 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.” That was the CEO’s 2015 summer sendoff message telling the entire company what was now the new way of thinking about digitalization at the top management level. It is clear that for digital leadership to ensue in any company, it needs a clear vision that is communicated from the top, and a true commitment to execution.

2. **Digitalization Should Bolster Your Business Strategy around your Core Distinctive Competence, Not Deflect nor Diffuse it into Adjacent Markets**

While digitalization has been one of the four strategic priorities at the LEGO Group since 2009, and there is a continuously increasing percentage of hybrid products that combine physical and digital play, and many partnerships with companies in the media and digital industries – all this digitalization has been done while staying focused on bricks – its core distinctive competence. The LEGO Group CEO has mentioned that strategy many times to the public media 27 as well as the learning that resulted from some of the early forays into too many adjacent markets. The LEGO Group has learned to keep the core business strategy focused on the brick while leveraging digitalization. It is tempting to point to Apple that has been an extremely successful cross-boundary buster in adjacent markets through digital platforms as it moved from computers to music to mobile phones and more – but in all of these moves it has transferred its distinctive competences 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 does not deflect nor diffuse core business strategy away from core distinctive competences. Both CXOs and CIOs need to be acutely aware of that as they co-drive digitalization demands from their company and its business ecosystem.

3. **Keep the Corporate IT Function Proximate to the Business to Help Responsive Digitalization – and Proximity has Many Dimensions**

The LEGO Group restructured its Corporate IT organization for business responsiveness as we described in Digitalization Move #8. The company learned that proximity has many dimensions. There is the physical co-location dimension. CIT management is currently located at company headquarters, and new CIT offices have risen at the major hubs – thus CIT and is visible and accessible to the business units. There is a collaboration proximity dimension and CIT has 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 for enterprise platforms. There is business area proximity and each business area has an associated unit at CIT with a CIO that directly engages with and intimately understands its issues. There is also cultural proximity, in that the strong LEGO culture precedes and trumps IT culture. In order to achieve responsive digitalization in a dynamic business environment, organizations need to understand those multiple dimensions of proximity and how to best operationalize them in their own context and setting. Keep corporate IT close to the business in all the many ways that you can, and the more they mesh, the more effective digitalization will be.

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27 For example: Hansegard J. “In a Digital World, LEGO Sticks to its Bricks”, *Wall Street Journal*, April 15, 2014.
4. **Distribute Digital Innovation Across the Enterprise rather than Centralize it in Corporate IT – and Create Multiple Digital Officers in the Business Areas**

As we explained in Digitalization move #9, LEGO CIT has discovered that growing digital officers in each business area is a much more effective way of orchestrating digital innovation. This distributed way of triggering digitalization across the enterprise within the business area where expertise is located, has resulted in more effective digitalization in which 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. This thinking is quite different from the emerging wisdom of having a Chief Digital Officer in addition to the CIO, and very different from arguments that due to increased digitalization and the rise of CDOs there will be less need for CIOs a. Rather, in this thinking there is one CIO and multiple digital officers throughout the business areas whether it is procurement or marketing or customer service. We believe that this multiple digital officers paradigm is applicable to all industries and more conducive to enterprise digital leadership.

5. **Leverage the Ecosystem of Partners for Complementary Digitalization Competences**

As we explained through several digitalization moves in Section III (Digitalization moves #1, #2, #3, and #4) the LEGO Group has learned that it is best to leverage the ecosystem of partners for complementary digitalization competences rather than try to delve into an area that deflects from the company’s skills and core competences. This has proved to be very helpful and expedient whether it be media companies like Warner Animation or Disney or digital advertising agencies or even LEGO fan clubs. In a dynamic digitalization context, leveraging partners with complementary competences is not only helpful – it is crucial. It is also an effective way of minimizing organizational complexity by not needing competencies within all functional areas, as it can be hard to establish a critical mass of competencies within some narrow areas of functional expertise. The LEGO Group believes it is beneficial to use partners to a greater extent to resolve these challenges.

6. **Iterate to Success in Digitalization**

Jørgen Vig Knudstorp the CEO of the LEGO Group has communicated to all employees in the company blog that effective digitalization and digital leadership requires a different mindset that nurtures the capability to experiment, learn, and iterate: “Working digitally is also a learning curve for us. It takes an ability to focus on getting 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 has resulted from the learning from many iterations in digitalization moves that the LEGO Group has undergone whether with enterprise platforms, new digital products, or digital customer experiences – where there have been failures as well as successes. Any enterprise which wants to be a digital leader will need to think that way all across the enterprise and design processes and platforms with that expectation in mind.

### New Ways of Thinking about Digital Platforms

1. **UX Drives IT Architecture and Not Vice Versa**

This new way of thinking resulted from learning that was gained through the efforts exerted in bolstering the enterprise platform (Digitalization Move #6) to accommodate the significantly growing demands for new applications and functionalities from digitalization moves in product ecosystems and marketing. It also resulted from the realization that there was a need for a complementary engagement platform (Digitalization Move #7) whose architecture was more
suited to digital interaction, a more “wow” user experience, and allowed quickly-added functionality. In the Enterprise IT paradigm LEGO CIT has for years supplied the internal audience (the workforce) with classic SAP GUI's but found out that could they gain higher end-user and process efficiency by offering consumer grade device agnostic applications. UX (User Experience) is a fundamental part of IT Solutions on the engagement platform as they reach the external digital audience. So in the past we first designed the enterprise IT architecture for integrity and then added the user interface and experience on top of that – living with whatever constraints that provided for UX (User Experience). For dynamic digitalization where UX is critical and key, that approach no longer works. We need to first think through what UX requirements we need and then build an IT architecture that is suited to that.

2. Dynamic Engagement Platforms for Digitalization Have Inverted Business Priorities and Generate a New Level of Complexity for Corporate IT
LEGO CIT learned from its digitalization moves around enterprise platforms (Digitalization Moves #6 and #7) that the typical business priorities for traditional enterprise platforms (cost then quality then reliance then time) were now inverted for dynamic engagement platforms (time then reliance the quality then cost). This requires a mindshift in corporate IT functions to an “ambidextrous” mindset such that they can simultaneously manage both types of platforms. This generates a new level of technical and managerial complexity for corporate IT departments, while at the same time providing flexibility and openness at the engagement level and complexity reduction and security at the enterprise level. The explosion of demand for new functionalities with increased digitalization will further exacerbate complexity of scale and scope. Managing both mindsets and complexity relief becomes a top priority for corporate IT functions in designing digital platforms and in their management.

LEGO CIT has had to collaborate and partner with many new technology vendors to deal with all the requirements for all the digitalization moves around products and in marketing and the dynamic changes needed in platform functionalities. Through this process it has learned that there is a need for technology vendors who work as partners, are agile, and who are comfortable working without clearly defined work packages. LEGO CIT also went from working with a few big partners to working with many diverse partners where some are niche players in their specific field of knowledge and expertise, and it learned how to breed the relationship with those types as well. There is also a realization that as these vendors become true partners, they are increasingly embedded in CIT teams and boundaries become more blurred. Thus any company that is embarking on a digitalization effort in dynamic business environments will need to think through how to manage its relationships and boundaries with new types of vendor partners.

4. SMAC is More than a Digitalization Slogan – It Needs to be Viewed with a Digitalization Value Lens
SMAC (Social, Mobile, Analytics, Cloud) has been used in the field to compactly and combinatorially express the four key technologies that are driving digital innovation in this new era of digitalization. The LEGO Group has learned from its digitalization moves around Products and in Marketing (Digitalization Moves #2, #3, and #4) the importance of social media in business and their value in discovery. Corporate IT has learned from changing employee expectations and the consumerization of the enterprise (see Digitalization Move #6) that people expect the type of UX they get from mobile apps in their enterprise applications and this is how they productively consume them and create value. The company has learned the importance of
analytics/big data in generating valuable insights from micromarketing and increased digital engagement (Digitalization Move #4). Corporate IT has 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 a cost saver. Thus thinking about SMAC with a value lens puts it in a different perspective for digitalization: Social media in business creates value from discovering things, Mobile technologies create value through consuming apps conveniently, Analytics create value through the real-time insights and personalization of marketing and products, and Cloud creates value through complexity reduction. Thinking of SMAC with a value lens will lead to more astute use of SMAC for effective digitalization.

### New Ways of Thinking About the Digital Workforce

1. **Appreciate Digital Generalists Rather than just Technical Specialists**
   “Hire for a Career not a Job!” is a saying that is often heard in the hallways. LEGO CIT has beefed up its technical staff to meet the new digitalization needs (see Digitalization Move #10) and learned that it is best to hire flexible dynamic employees who are adaptable to task and position changes and who can work on digitalization anywhere in the enterprise. So for any company seeking digital leadership and trying to beef up its digital workforce, it is better to hire new technical employees for a digitalization career in the company rather than for a specialized job in Corporate IT. CIOs need to rethink how they hire into their Corporate IT function if they would like to augment the enterprise’s capabilities for digital leadership.

2. **Create an Attractive WorkPlace for Digitally Savvy People**
   The culture at the LEGO group has always nurtured playfulness at work and creating a fun collaborative environment. There is also a realization that the new generation of workforce has different expectations in terms of flexibility of working hours and mobility, information sharing, consumer-grade technology capabilities and access – and a more humanized workplace with more purpose and meaningful work. As the extent of digitalization increases and more born-digital employees are hired, the criticality of this issue will rise. LEGO CIT has experienced some of that in its own hiring (Digitalization move #10) and realized how expectations have changed. LEGO CIT is just about to initiate a program to make the work-place at the LEGO Group more attractive and timely – the workforce of the future.

3. **Look for Better Ways to Improve and Monitor the Digital Quotient of Your Enterprise WorkForce**
   The LEGO Group as a legacy brick-and-mortar company has a mix of traditional employees who have been at the company for many years as well as an increasing number of born-digital millenials. The digitalization culture requires adaptability, resilience, and an appetite for speed in addition to what might be called “digital savvy”. Clearly with a heterogeneous workforce like the LEGO Group’s, there has been a realization that not everyone can be at the same level of digitalization readiness and an acceptance that some employees will not achieve a high level of digitalization readiness, but they can still have valuable roles. Companies seeking to develop their workforce for digitalization will want to be aware of its digital quotient, seek ways to improve it, and measure and monitor it over time. There are a number of emerging methods and instruments that measure digital quotient which have a culture and workforce component.

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From Digital Moves and New Ways of Thinking to Enterprise Capabilities for Digital Leadership at the LEGO Group

We have in this section described new ways of thinking and learning that have resulted at the LEGO Group due to the digitalization moves that it undertook as it went through its transformation. We have described the implications of each of these new ways of thinking. This has changed the way of thinking at the LEGO Group around enterprise digitalization, digital platforms, and the digital workforce. For each of those three areas we have labeled and outlined several snippets that have changed the lens through which the LEGO Group views digitalization and the vocabulary and culture around digitalization. In combination, these digitalization moves and the new way of thinking have had a transformational impact at the LEGO Group in terms of building better foundations for digital leadership and developing augmented enterprise capabilities for digital leadership.

Figure 13 - The Path to Enterprise Digital Leadership

Figure 13 shows our perspective on the progression towards enterprise digital leadership. Digitalization is of course primarily a process (and a continual one), but it is also a state and there can be different levels of digitalization. Typically, digitalization efforts are ad-hoc and piecemeal at first. Then some enterprises will step up their levels of digitalization and advocate and 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. At that point they become more successful in building the foundations and capabilities for enterprise digital leadership. Both the digitalization moves and the new ways of thinking enterprise-wide digitalization are indicative that the LEGO Group is beyond that point and has been building those capabilities and climbing the curve to increasingly higher levels of enterprise digital leadership.

All the new ways of thinking about enterprise digitalization at the LEGO Group described above are indicative of a growing appreciation of digitalization that is strategic, organizational, technical, and people-sensitive -- and that the company is favorably poised for digital leadership. It is clear from these exhibited new ways of thinking that the LEGO Group has a deep and true commitment to enterprise-wide digitalization starting from the CEO and top management team. Suffice it that digitalization has explicitly been one of the four strategic priorities of the LEGO Group since 2009, and what is more telling about this commitment than to have digitalization be the sole topic of the CEO’s 2015 summer vacation sendoff message to all LEGO Group employees.

We asked the question: Has the digitalization initiative and learning and new ways of thinking augmented the LEGO Group’s enterprise capabilities for digital leadership going forward into the future? Has the digitalization initiative moved the LEGO Group further along the path to digital leadership? We believe the answer is yes.

Building with LEGO bricks changes a child’s way of thinking and enhances his or her capability of problem solving for new situations but it is not easy to measure with numbers. Similarly, the impact of new and better thinking about digital leadership is not easy to measure with numbers either, nor are the augmented enterprise capabilities that have come about through that29 as they deal with potential for the future. But often examples help to demonstrate.

There are many examples and illustrations all around us at the LEGO Group that indicate that the capabilities for digital leadership have been enhanced. The best examples are the ones that bring a confluence of enterprise digitalization capabilities, digital platform capabilities, and workforce

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capabilities. One such example is the on-going design of the new separated (but coupled) engagement platform (digitalization move #7) which is not yet built but in advanced design. The design of the engagement platform could not have been possible without the platform capabilities built over the years that allow it to simultaneously take advantage of SaaS and APIs in a well-structured open three-layered architecture, while also solidly operating core enterprise platform components such as Oracle ATG and SAP for example. 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 the workforce capabilities of LEGO CIT that have been developed for digitalization applications over the years. The design is re-architected for UX (user experience) that goes beyond UI (user interface) – it takes into account how the business processes for enterprise-wide digitalization work in for example marketing. This could not have possible to design without the enterprise-wide digitalization capabilities that have developed over the years from all those digitalization moves. Some of these early digitalization moves were painful and only partly successful leading to rethinking of the whole approach to building platforms for digitalization, and the twin platform and twin operating system model was born. It is only by this experience and building experiments that this common understanding at LEGO CIT was reached. Very importantly, all the learning that was gained from multiple aspects of enterprise-wide digitalization through the years is being built into this engagement platform while fulfilling the LEGO Group’s ecosystem-wide digitalization needs (customers, partners, employees) in a more agile and resilient way. This hybrid digital enterprise model is bridging enterprise needs and digital audience needs. The LEGO Group that was born as a conventional brick-and-mortar company has developed the enterprise capabilities to execute digitally.

When an enterprise capability is augmented, it increases the potential for better actions in the future. It is clear to all of us that the LEGO Group has enhanced its enterprise capabilities through digitalization and has moved further along the path of digital leadership. It is poised to continue this virtuous learning cycle, and is much better equipped to handle future digital leadership challenges.
Section V: Understanding the Foundations and Enterprise Capabilities for Digital Leadership

While we drew on the LEGO Group experience, in both Sections III and IV we tried to articulate the digitalization moves and the new ways of thinking about digital leadership in a generic way to be empathetic to the reader, and also help provide insights for CIOs and CXOs from other industries and contexts who would like to move along the path of enterprise digital leadership. In this section we try to articulate a better understanding of the foundations and capabilities for digital leadership outside of the LEGO Group context. We ourselves have also learned new insights from the LEGO Group digitalization experience about how to move further along the digital leadership path. We started out in Section I trying to better understand what digital leadership really is. We address that again more fully in this section with our new understanding in a way that we hope will be useful for CIOs, CXOs, as well as research scholars.

Figure 15 – Building the Foundations and Enterprise Capabilities for Digital Leadership

At the beginning of this paper in Section I we provided our definition of digital leadership for the enterprise as doing the right things for the strategic success of digitalization for the enterprise and its
business ecosystem. What we have searched for in this paper is how to move further up the path to enterprise digital leadership. We have also noted that there is no common consensus or comprehensive articulation for the operational aspects of digital leadership in either theory or practice, but that we do know the scope of some of the foundational aspects of strategy and organization that might have to change and be different. So we noted also in Section I that it would probably mean a different kind of business strategy, different kinds of business models, a different 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. While we noted that we would expect each of these six aspects to be of “a different kind” we did not know how and in what way.

Through what we have learned through the LEGO Group experience of digitalization we now have a better understanding of the distinctive characteristics of each of those aspects for digital leadership and how the foundations and enterprise capabilities for digital leadership can be developed. We show our thinking in Figure 15 and it follows the LEGO philosophy of act/do/learning/build capability. It is with much trepidation that we included pictures of babies in Figure 15 as we were worried some readers might think we were only addressing beginners on the road to digital leadership. However, that is not our intent. Rather we draw on the LEGO Group’s philosophy that children are role models to be developed. There a certain humility in doing that, and after all children’s minds are much more open to learning new things and are unfettered by the baggage that adults carry in their heads. In order to move up the path of digital leadership we will need to think in new and different ways.

In Figure 15, the six foundational aspects of strategy and organization identified in Section I are portrayed as building blocks. The digitalization moves around those building blocks with a committed digitalization enterprise-wide mindset result in learning new and better ways of thinking about digital leadership as well as in turn augmenting the enterprise capabilities for digital leadership which move the enterprise further along the road to digital leadership and an increased level of digital leadership. An augmentation of enterprise capabilities results in building more potential in the enterprise for future actions. This influences the next round of digitalization moves to be more effective and the cycle of do/act/learn/build capability continues.

For each of the six foundational aspects of strategy and organization, we have created a table (Tables 1-6 below) which identifies the distinctive characteristics required for each of them for digital leadership. We have tried to articulate them in a way that we hope will be useful for CIOs, CXOs, as well as research scholars. The tables are hopefully self-explanatory. The first left hand column summarizes the distinctive characteristic of each of the foundational aspects needed for digital leadership. The last right hand
column describes some possible augmentation mechanisms for the enterprise capability that need to be developed for each distinctive characteristics with a number of digitalization moves and ways of thinking. We have organized the six tables roughly in the sequence of the three types of capabilities for digital leadership we identified through the LEGO Group experience: Business Strategy, Corporate IT Function, Business Models (enterprise-wide digitalization capabilities); Enterprise Platforms (digital platform capabilities); and People Mindset/Skill Set, Humanized Workplace (digital workforce capabilities). We have also selected only three distinctive characteristics for each foundational aspect not to overload the reader, who may discover and add others. Going through these tables is laborious and they are not meant to be comprehensive, but we have included some detail in case the reader is interested in a particular distinctive characteristic in which case it will come to life for them.

Table 1 - Distinctive Characteristics of Business Strategy for Digital Leadership

<table>
<thead>
<tr>
<th>Distinctive Characteristic of Business Strategy</th>
<th>Description</th>
<th>Enterprise Capability</th>
<th>Augmentation Mechanisms for Enterprise Capability</th>
</tr>
</thead>
</table>
| A Fused Business Strategy that is Executed Digitally | A fused business strategy that is executed through enterprise-wide digitalization with a deep top management commitment to digitalization, rather than just a business strategy that has an extra digital layer | Top management team organizational capability to devise and implement business strategy through a digitalization mindset | - CEO dissemination of vision for such type of strategy to all employees  
- Commitment to leveraging digitalization articulated as critical priority for enterprise  
- organizational structure for enterprise based on visibility and transparency  
- proximity of Corporate IT function to business units |
| A Business Strategy that Bolsters Core Distinctive Competences through Digitalization | A business strategy that is very aware that the pull of digital platforms and digital media can pull companies into too many adjacent markets or areas where the enterprise does not have distinctive competence | Top management organizational focusing capability to closely integrate digitalization into strategy rather than loosely couple it | - understanding and practicing core distinctive competence of the enterprise  
- learning 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 | A business strategy that is based on collaboration with partners around complementary digitalization competences, rather than viewing them as vendors or going it alone. | Enterprise-wide organizational capability to work well with different types of partners across enterprise boundaries and in different types of markets | - managing visibility and transparency across porous boundaries  
- embedding partners in enterprise teams  
- working with dynamic partners who can scale up and down quickly in digitalization project  
- working with partners with niche digital expertise when needed |
<table>
<thead>
<tr>
<th>Distinctive Characteristic of Corporate IT Function</th>
<th>Description</th>
<th>Enterprise Capability</th>
<th>Augmentation Mechanisms for Enterprise Capability</th>
</tr>
</thead>
</table>
| A Corporate IT Function that is Meshed Closely with Business Units and Partners & Proximate along multiple dimensions | The IT organization needs to play the role as solution-taker, partner and platform integrator. It needs to mesh well with business units and external partners from the eco-system. It needs to understand the multiple dimensions of proximity and operationalize them for their own cultural context. | Organizational capability for corporate IT function to collaborate closely with multiple functional areas and different business units. Organizational capability for corporate IT function to collaborate closely and work comfortably with many changing agile partners who work without clearly defined work-packages. | - Restructuring IT organization for proximity with business units the organization at all level – and leaving the plan-build-run way of organizing to a CTO role  
- Place IT organizational physical close to the business units and various hubs globally – to increase the level of collaboration, mutual understanding and IT organization visibility  
- Disseminate the “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 | Instead of having one executive Chief Digital Officer and centralized responsibility for digital innovation within the enterprise, distribute the job to multiple digital officers in business units who work closely with corporate IT | Same as above | - Breed 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 will need to spend time focusing on enterprise-wide digitalization of the organization. The CIO will also need to drive ideas for new architectures of enterprise platforms, and at the same time inspire the corporate IT workforce to have an outside-in mentality | An enterprise organizational capability that has transparency and information sharing at the top management level  
A corporate IT platform building capability that takes an enterprise-wide view | - Frequent interaction and collaboration with top management team  
- Evangelizing the digitalization message and philosophy to the CEO and board  
- Educating the corporate IT employees on digitalization philosophies  
- Creating a strategic business development function with Corporate IT |
<table>
<thead>
<tr>
<th>Distinctive Characteristic of Business Models</th>
<th>Description</th>
<th>Enterprise Capability</th>
<th>Augmentation Mechanisms for Enterprise Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Models for Products &amp; Services that Takes Advantage of both the Physical and Digital world as appropriate</strong></td>
<td>Self-explanatory</td>
<td>Organizational and digital platform ability of business unit teams and partners to design, modify, and assess digital business models and hybrid business models with all their dimensionalities (value proposition, interface, platform, partnering processes, revenue sharing)</td>
<td>- Launching new products and services with both physical and digital components  - Launching initiatives with partners who bring special technology or media expertise</td>
</tr>
<tr>
<td><strong>Business Models for Products and Services that Co-Creates Value with Customers and Communities</strong></td>
<td>Understanding that in digital business ecosystems with high connectivity, it is strategic to leverage partners and customers</td>
<td>Ability of enterprise to manage porous boundaries with customers and partners</td>
<td>- Running crowdsourcing initiatives for new product or service design  - Launching online community groups  - Moving customers up the affinity pyramid to increase engagement  - Launching omni-channel marketing initiatives  - Launching new products and services with ecosystem partners</td>
</tr>
<tr>
<td><strong>Business Models that use SMAC with a Digitalization Value Lens</strong></td>
<td>Using social media for business discovery, mobile apps for consuming enterprise applications, analytics for insight, and cloud for complexity reduction</td>
<td>Ability of enterprise and corporate IT to harness consumer-grade technologies within enterprise applications and business units</td>
<td>- Initiate social media for business applications  - Launch mobile apps for enterprise functions with “what you see is what you need” view  - Develop analytics competency centers within business units for micro-marketing  - Experiment with multiple cloud providers and Saas applications</td>
</tr>
<tr>
<td>Distinctive Characteristic of Enterprise Platforms</td>
<td>Description</td>
<td>Enterprise Capability</td>
<td>Augmentation Mechanisms for Enterprise Capability</td>
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</table>
| An Enterprise Platform that is Rock-Solid but consumer-grade-friendly to employees | The Enterprise Platform often based on ERP systems needs to be rock-solid, carefully designed and tested, with careful specifications. This is not unusual. However for digitalization of the enterprise, consumer-grade applications help make the enterprise more efficient and digitalization spread more easily | - "Plan-Build-Run" platform capability in Corporate IT  
- Mobile app development capability with enterprise framework | - Enhance core enterprise platform team capabilities and keep in-house  
- Launch mobile apps in enterprise platform environment  
- Work only with external partners on non-essential enterprise tasks |
| An Engagement Platform that responds very quickly to dynamic demands for new functionalities | A platform for dynamic digital interaction with customers and partners in the ecosystem, and rapidly changing functionalities that have to be added quickly. Business priorities shift in order to time, reliance, quality, and cost. | - Agile development capability in Corporate IT  
- Ability to deliver “good enough” solutions and iterate  
- Ability to maintain 24/7 availability even when changes are made  
- Living happily with continuous beta-mode | - Digitalization requests from customers, partners, and business units will be your automatic augmentation mechanisms for the capability to deliver – as they will trigger many digitalization moves.  
- Develop orientation programs (inspired by for example VUCA) to develop the engagement platform mentality |
| A Loose-Tight coupling of enterprise and engagement platforms that puts high priority on UX | The enterprise platform and engagement platforms have to be architected such they can be simultaneously managed yet give high priority for UX needed for digitalization | -Ambidextrous capability and dual mindset for corporate IT to manage both platforms simultaneously  
- Corporate IT Ability to have strong governance frameworks and operating models for both platforms. | -Launch API and micro-service initiatives and gain experience  
- Cross-pollinate Corporate IT staff with people from born-digital companies |
Table 5 - Distinctive Characteristics of People Mindset & Skill Set for Digital Leadership

<table>
<thead>
<tr>
<th>Distinctive Characteristic of People Mindset &amp; Skill Set</th>
<th>Description</th>
<th>Enterprise Capability</th>
<th>Augmentation Mechanisms for Enterprise Capability</th>
</tr>
</thead>
</table>
| **Iterate to Success and Experimentation**               | The individual and group propensity to “act their way into new ways of thinking”. The propensity to experiment, fail, and try again and iterate to success | - Capability to manage transparently and accept failures  
- Capability to take risk on new initiatives  
- Living happily with continuous beta-mode | - run experiments and prototypes  
- train employees for accepting failures and have positive mechanisms for sharing and learning from them  
- encourage a culture of collaboration and experimentation  
- encourage and practice flat hierarchies, where decision authority is delegated |
| **Digital Generalist & Collaboration skills across porous boundaries** | Hire people who have the skillset to move between tasks and jobs across business units, rather than hiring rigid technical specialists who just want to work in corporate IT. | - Ability to move people between business units  
- HR department ability to have fluid job specifications | - Rotate people across business units and jobs  
- Integrate diverse employees, and partners through shared purpose and meaning  
- Make opportunities for employees to constantly develop new skills and seek new opportunities |
| **Ability to change tasks and assignments quickly and flexibly** | Flexibility to shift to meet challenges and opportunities as they arise  
External focus | Same as above | Force yourself to “give up” a good employee in your business unit when a critical need is to be met elsewhere |
<table>
<thead>
<tr>
<th>Distinctive Characteristic of Humanized Digitalization Workplace</th>
<th>Description</th>
<th>Enterprise Capability</th>
<th>Augmentation Mechanisms for Enterprise Capability</th>
</tr>
</thead>
</table>
| **A Workplace that offers easy accessible digital experiences** | A workplace that offers personalized, mobile and consumer-grade digital experience (also on the enterprise platform) to the employee. This makes for a smooth transition between private and profession use of technology and user-interfaces | Corporate IT ability to take the time to partner with employees to co-create (develop, test and build) consumer-grade mobile apps that are personalized | - Offer user friendly enterprise applications/apps for the workplace  
- Offer applications/apps that are personalized for employee tasks  
- BYOD Initiatives – design sanctioned “bring your own device” programs |
| **A Workplace that encourages and prioritizes ubiquitous learning and knowledge sharing** | A workplace that recognizes that digital-savvy employees require a higher purpose for their work and have a constant need to develop themselves and learn | Enterprise ability to share knowledge across all levels of the enterprise | - Launch platforms for collaboration and knowledge sharing  
- Practice knowledge sharing and open information exchange  
- Engage employees in enterprise-wide digitalization events |
| **A Workplace that thrives on flexible location and time** | A workplace that acknowledges that employees have different needs and priorities towards working hours and where to work, and that with the born-digital generation, there is a shift in desired mode from “working when requested” to “working in the moment of need” | HR and Enterprise capability to empathize with employee lives, families, and personal preferences while still preserving productivity | - Establish a collaboration pattern that allows employees to freely decide how and when to work  
- Invest in digital platform capabilities for remote work  
- Make sure that technology support services are provided 24/7  
Make information available wherever the employees are, via multiple and mobile devices |
Where Do We Go From Here?

The distinctive characteristics identified in each of these tables are what we learned from the LEGO experience is needed for digital leadership. We mapped them into the six foundational aspects of strategy and organization that need to be changed and from which digitalization moves can emanate (Figure 15) and new learning and thinking can ensue, and augmented capabilities for digital leadership can be built. We hope it is clear that these are directed to both CIOs and CXOs, as digital leadership cannot be achieved without them co-driving it.

So where does one start? Obviously an organization will not be able to develop all those capabilities and distinctive characteristics simultaneously. However, it is clear to us that all three types of capabilities need to be developed: enterprise-wide digitalization capabilities, digital platform capabilities, and digital workforce capabilities. So for example, just having strong digital platform capabilities without a committed enterprise mindset to digitalization will hinder moving the organization up the digital leadership path. Similarly developing the enterprise-wide digitalization capabilities without a capable digital workforce will also hinder it. While keeping that in mind, it is also important to start somewhere and attempt digitalization moves, occasionally fail, and learn from that and build capabilities. Typically ecosystem demands (customers, partners, employees) will drive the early digitalization moves.

The way that enterprises and organization move up the digital leadership path will also differ depending on the type of organization. A brick-and-mortar machine tool manufacturer in Chicago will differ from a born-digital video streaming company in San Jose will differ from a rural healthcare provider in Nairobi. The tool company may need to spend more effort on building digital platform capabilities, the video streaming company may need to spend more effort on building enterprise-wide digitalization capabilities, and the healthcare provider may need to spend more time on building the digital workforce. We believe they will all want to move towards digital leadership as it will increasingly become a requirement for success in the future – but each in their own way.

We have tried in this section to articulate the operational aspects of digital leadership and move them forward, but there is still much work to be done both in practice and in academia, and there are many less understood issues around building enterprise capabilities for digital leadership. There have been calls for information systems scholars to give more attention to the transformational impacts of information technology30 and we hope this paper further bolsters this call as more relevant research and theory building on the critical issues of digital leadership would make a felt impact on practice.

Section VI: Concluding Note

We have described and reflected on key aspects of the LEGO Group’s experience in digitalization and the learning that occurred around it. We have shared the LEGO Group’s digitalization moves and their impacts, as well as the change in thinking that ensued both at the leadership level and throughout the company. We have shown how this has helped build the foundations and enterprise capabilities for enhancing digital leadership at the LEGO Group going forward.

We hope we have provided insights for CIOs and CXOs in other organizations and contexts undergoing digitalization who aspire for their organization to be a digital leader and whose organizations have the stamina to stay the course, as effective digitalization is a long term effort and a deep organizational change. We have also tried to articulate the requisite foundations and capabilities needed for digital leadership in a more operationalized way that others can take advantage of.

We believe that digital leadership is a critical issue for organizations around the world in both developed and emerging economies, in both brick-and-mortar companies and in born-digital companies – and in all industries whether we are providing taxi rides or streaming videos or producing potato chips or computer chips. We hope that sharing the LEGO Group’s experience and learning from it has provided a small step in advancing our understanding of how to more effectively lay the foundations and build the capabilities for digital leadership. We also hope that these efforts stimulate more research scholars to develop theories of digital leadership to help make an impact where it counts in practice.

Finally, in the spirit of the LEGO experiential learning philosophy, we as authors have used the act of collaborating on the articulation and writing of this paper for the SIM paper competition to act our way into a new way of thinking. We believe it has helped develop our capabilities for a better understanding of digital leadership going forward, and we have found the collaboration between academics and practitioners on this paper to be both energizing and useful for us all. We believe that the dissemination of this paper to others at the LEGO Group and outside it will help fuel conversations, efforts, and further progress in digital leadership. And the energizing song lyric from the LEGO movie continues to play in our head: Everything is awesome. Everything is cool when you’re part of a team!\(^{31}\)

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\(^{31}\) [https://www.youtube.com/watch?v=StTqXEQ2I-Y](https://www.youtube.com/watch?v=StTqXEQ2I-Y) for readers who want to feel the vibe, this rendering of the song has been viewed over 38 million times.