Latin America 4.0:
The Digital Transformation in the Value Chain

The upcoming challenge for Latin American business

gA Center for Digital Transformation
INDUSTRIAL DIGITIZATION: THE LATIN AMERICAN CHALLENGE
DIGITAL TRANSFORMATION OF THE ECONOMY REMAINS LATIN AMERICA’S CRITICAL CHALLENGE FOR THE UPCOMING YEARS

ADOPTION OF DIGITAL TECHNOLOGIES

DIGITIZATION INDEX

THE CHALLENGE

- A large part of growth in digitization has been driven by consumer adoption (digitization of consumption)
- So far, the contribution of digital technologies to productivity has been marginal at best
- Economic growth outlook (2015-17) for the region will be a third of the past decade
- The only option to resume growth is to accelerate the digitization of our economies (digitization of production)
THE PURPOSE OF THIS STUDY BY THE gA CENTER FOR DIGITAL TRANSFORMATION WAS TO UNDERSTAND THE NATURE OF THE CHALLENGE AND CONTRIBUTE WITH RECOMMENDATIONS

UNDERSTAND THE SITUATION

- Level of digitalization of production processes by industry
- Is the level of digitization homogeneous or are there leading and lagging sectors?
- What explains the different levels of digitization across industries and countries?
- What are the enablers and barriers faced by Latin American firms to assimilate digital technologies in production processes?
- Are Latin American businesses ready to incur the much-needed digital transformation?

PRESCRIBE

- Implications of these challenges for the management of Latin American companies
- Define what are we trying to achieve through digitization
- How do we build a company-wide willingness to transform?
- What is the incremental economic value derived from digital transformation?
- What entails to digitize all company business processes?
- How do we attract and retain the right talent?

- Face-to-face interviews with 75 Latin American corporations
- Analysis of micro-data of National Industrial Census in several countries
DIGITAL TRANSFORMATION IS THE ADOPTION AND ASSIMILATION OF DIGITAL TECHNOLOGIES ACROSS ALL STAGES OF THE ENTERPRISE VALUE CHAIN

- IT technology (computers, operating software, applications)
- Networks (wired and wireless)
- Fixed and mobile broadband

ENTERPRISE VALUE CHAIN

• Digitization of internal processing function through systems (e.g. ERP, CRM)
  • Any digital interface with providers of outsourced functions

Digitization of the supply chain
• Access to information on inputs and services
• Handling of electronic purchase orders online
• Use of purchase marketplaces
• Use of electronic banking

• Digitization of the sales function
  • Transactional capability to receive orders, fulfill and provide customer care online

3. THE DIGITAL TRANSFORMATION IN THE VALUE CHAIN

As we mentioned above, the adoption of digital technologies does not indicate their incorporation in the industrial or fulfillment services processes to render them more efficient, flexible and responsive to market changes. The digital technologies industry adoption index presented above (in table 1) is just one indication of the complex process of digitization of the firm. In order to gain a clear view of the stage of digitization of industries across countries we need to rely on the concept of the value chain at the firm level. Porter (1985) defines the value chain as the combination all of the firm’s activities undertaken to create value, whereby each of them contributes to raise a customer willingness to pay as well as to reduce the firm’s production costs. Porter conceptualized the value chain in terms of a number of vertical functions (inbound logistics, operations, outbound logistics, marketing and sales, and service) and horizontal ones (firm infrastructure, human resource management, technology development, and procurement).

While we do not have detailed information about the levels of digitization at all of Porter’s value chain links, we were able, through the analysis of interview data and the national industry census, to measure digitization at four value chain stages: infrastructure, sourcing, processing, and sales & distribution (see figure 4). See methodology of data analysis in appendix B.

Figure 4. Conceptual View to Measure Digitization in the Value Chain

Digitization of the supply chain
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- Handling of electronic purchase orders online
- Use of purchase marketplaces
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Digitization of internal processing function through systems (e.g. ERP, CRM)
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Digitization of the sales function
- Transactional capability to receive orders, fulfill and provide customer care online
NATIONAL INDUSTRIAL CENSUS DATA INDICATES THAT WHILE DIGITAL TECHNOLOGY INFRASTRUCTURE IS PERVERSIVE, THE DIGITALIZATION OF VERTICAL VALUE CHAIN STAGES IS LOW

LATIN AMERICAN INDUSTRIES: DIGITIZATION BY STAGE OF VALUE CHAIN
(100-65: Advanced; 65-45: Transitional; <45: Limited)

Source: Calculated by Telecom Advisory Services LLC from National Industrial Census data
IN FACT, INFRASTRUCTURE DIGITIZATION IS HIGH ACROSS ALL SECTORS AND COUNTRIES

LATIN AMERICAN INDUSTRIES: DIGITAL TECHNOLOGIES INFRASTRUCTURE INDEX
(100-65: Advanced; 65-45: Transitional; <45: Limited)

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Note: The index blends indicators on computer adoption, Internet usage, and LAN deployment.

Source: Telecom Advisory Services analysis
HOWEVER, THE CONTRIBUTION OF DIGITAL CAPITAL TO REGIONAL ECONOMIC GROWTH IS LOW

LATIN AMERICAN: RELATION BETWEEN DIGITAL TECHNOLOGY ADOPTION AND CONTRIBUTION OF ICT CAPITAL TO ECONOMIC GROWTH BY SECTOR AND COUNTRY

According to the data in table 1, with the exception of the mining sector in Mexico, no industrial sector of the five analyzed exhibits a digitization index lower than 60 (on a scale of 1 to 100). However, despite this extremely high adoption index across most sectors and countries, the contribution of ICT capital to sector productivity growth remains extremely low (see table 2).

Table 2. Latin America: Contribution of sector ICT capital to economic growth (in percentage points)

Data in table 2 show that, with the exception of Brazil, the contribution of ICT capital to economic growth, while positive, is always lower than that of labor productivity. On a sector basis, ICT capital appears to only have a moderately strong contribution to the economy in Brazilian mining and manufacturing, Argentine financial services, and Mexican retail trade. Furthermore, there is no relation between the digital technology adoption among firms (which is uniformly high as indicated in table 1) and the sector contribution of ICT capital to economic growth (as indicated in table 2) (see figure 3).

Figure 3. Relation between Digital Technology Adoption and Contribution of ICT Capital to Economic growth by Sector and Country

(*) Note: Arithmetic average.

Source: Digital Technologis Adoption Index, calculated by Telecom Advisory Services; Contribution of ICT Capital to Economic Growth, ECLAC based on LA KLMES data, cited in Katz (2015); Telecom Advisory Services analysis
TO ACHIEVE DIGITAL IMPACT ON PRODUCTIVITY, ENTERPRISES NEED TO REENGINEER THEIR OPERATIONS, CHANGE THEIR ORGANIZATION STRUCTURES, AND ATTRACT/RETAIN TALENT

- Adoption of digital technologies does not yield neither a simultaneous nor an automatic productivity improvement
  - Initially, digital technologies are used for applications that have little impact on overall productivity
  - Beyond this, there are substantial inefficiencies arising from running manual paper-based and computerized processes in parallel, usually resulting in two separate work-streams
  - In many cases the adoption of digital technologies has been driven by technological progress (e.g. memory and processing capacity, bandwidth), rather than user capacity to assimilate them in a productive fashion

- All this equates to the need to accumulate **intangible capital**
  - The difference between the purchase price of digital technology and the value created once it has been productively assimilated by a firm
  - Intangible capital as a factor of production cannot be acquired in the market; it is rather a distinctive way a company combines its factors of production and has to be developed “in-house”
WHY ARE LATIN AMERICAN BUSINESSES NOT ACHIEVING THE REQUIRED DIGITAL TRANSFORMATION?
IN GENERAL, LATIN AMERICAN BUSINESSES DO NOT APPEAR TO BE UNIFORMLY READY TO TACKLE THE DIGITAL TRANSFORMATION CHALLENGE

LATIN AMERICAN: DIGITAL READINESS INDEX
(Scale: 1-100)

Sources: gA; Telecom Advisory Services analysis
DIGITAL STRATEGIES, DEFINED IN A COMPREHENSIVE COMPANY-WIDE SCALE, ARE RARELY IMPLEMENTED

WHICH STATE BEST DESCRIBES THE CURRENT STAGE AT WHICH YOUR COMPANY IS IN TERMS OF DIGITAL STRATEGY? (total answers: 177)

Sources: gA; Telecom Advisory Services analysis
Beyond the Chief Information Officer, senior management is less involved in digital transformation efforts.

Beyond the Chief Information Officer, the Chief Executive Officer, Business Unit Leader, and Chief Marketing Officer receive approximately equal number of mentions. Interestingly enough, few companies consider it necessary to create a Digital Officer function, preferring to assign the responsibility of managing the development and implementation of a digital strategy to an existing member of the management team. This appears to be a positive approach since management research indicates that the creation of a specialized management function such as a Digital Officer would result in a position that lacks organizational traction and credibility with a company's core business.

Is the involvement of the Chief Executive Officer in the management of a digital strategy a critical success factor? At face value, relatively few CEOs appear to be involved with digitization (60 mentions out of 177 responses). However, when cross-tabulating CEO involvement with the industrial sectors that score highest in their rate of digitization, a correlation emerges (see table 3).

Figure 9. Latin America: Average Digitization by Industry and Country

Table 3. Latin America: CEO involvement in digital strategy vs. sector digitization

WHO DRIVES THE DIGITAL STRATEGY AT YOUR COMPANY? (Chose more than one if apply) (total answers: 177)

Sources: gA; Telecom Advisory Services analysis
IF DIGITAL INITIATIVES ARE BEING CONDUCTED WITHIN COMPANIES, THEY ARE MOSTLY IMPLEMENTED IN A “SILOED” WAY

FROM THE FOLLOWING STATEMENTS, SELECT THE ONE THAT BEST DESCRIBES YOUR COMPANY’S CULTURE AND EMPLOYEE READINESS FOR DIGITAL TRANSFORMATION (total answers: 171)

Sources: gA; Telecom Advisory Services analysis
WHEN ASKED ABOUT THE BARRIERS PREVENTING THE IMPLEMENTATION OF A DIGITAL TRANSFORMATION, EXECUTIVES MENTION PRIMARILY FIVE

WHAT ARE THE MOST IMPORTANT BARRIERS WHEN IMPLEMENTING A DIGITAL TRANSFORMATION PROJECT (total answers: 171)

Sources: gA; Telecom Advisory Services analysis
While Latin American businesses have spent considerable capital in the deployment of new technologies, the expected gains in productivity have not yet been achieved.

One of the main challenges our economies face is how to accumulate intangible capital, defined as:

- Restructuring of a business organization
- Retooling of its business processes
- Training of its human resources to achieve a full productive impact of digital technologies
- Attracting and retaining the right human talent

The readiness of Latin American businesses to achieve their digital transformation depends on a holistic vision and approach to capabilities development.
THE ACCUMULATION OF INTANGIBLE CAPITAL: A CAPABILITIES PERSPECTIVE
LATIN AMERICAN BUSINESSES NEED TO DEVELOP A VISION OF WHAT THEY ARE TRYING TO ACHIEVE THROUGH DIGITIZATION

- Key question: how will sustainable competitive advantage be achieved through digital transformation?
- The development of a digital vision requires integrating four elements
  - An overarching strategic perspective of a company’s competitive position and capabilities
  - A statement comprising its value proposition to the customers served,
  - The economic objectives, the position in the industry value chain,
  - The capabilities required
- The vision needs to contain a compelling long-term, enterprise-wide statement of strategic intent
- Its objective is not only to motivate and inspire employees but also to signal customers the medium to long-term direction of the company
- The vision needs to be constructed based on limited consensus building effort, through a process driven by top management
Empowerment from senior management and buy-in from the operating executives

Clear financial goals, such as required capital expenditures, savings to be generated from higher operational efficiencies, and incremental revenues to be achieved through productivity enhancement

A Business Process transformation framework that maps how to incorporate digital technology in all aspects of the operating model

Alignment of the people in the organization with the transformation goals, using communication workshops, training and change management programs, creating the incentives to ensure they become a part of the process

An IT function capable of orchestrating the new technologies with the existing landscape of core applications, data and infrastructure

A roadmap that includes an agenda for all the potential digital transformation initiatives that will be needed over the next several years, planning for shorter, high-impact project cycles, over a 3-5 year horizon
IMPLEMENTATION OF A DIGITAL TRANSFORMATION PROGRAM IS DEPENDENT ON THE CAPACITY TO ATTRACT NEW TALENT AND RETRAIN THE EXISTING HUMAN CAPITAL

- Flexibility: flexible professionals with solid background and ability to assimilate new technological developments
- Diversity: multiple skills, such as process innovation, digital marketing, customer experience, information technology
- New forms of collaboration and communication: multidisciplinary teams, design thinking workshops, support from change management experts
- Creative thinking and innovation: promote innovative thinking down the organizational hierarchy, collaborative and iterative method to develop and implement digital initiatives
- University and research center partnerships: link with digital platform development and economic/business thinking and teaching
GOVERNANCE MODELS OF THE DIGITAL TRANSFORMATION REMAIN A CRITICAL ENABLER OF SUCCESSFUL IMPLEMENTATION

At the executional and implementation levels, the key components of a Value Management model are:

- **Value Performance Indicators (VPIs)**: Achieved on a quarterly or annual basis for each of the Value drivers.
- **Value Scoreboard**: Measures and monitors the performance of the company relative to the Value Performance Indicators.
- **Value Management Office**: A governance structure including corporate management and the leadership of the transformation program at the operating levels.

A major industrial group in Colombia launched a wide-ranging Digital Transformation program for its motorbike assembly and distribution division during 2015. As part of their Value Management model, they defined 3 key value drivers:

- **Optimize inventory levels and working capital by better aligning their value chain with local demand.**
- **Increase sales and sales productivity by creating an enhanced purchase experience for their customers.**
- **Achieve efficiencies within their shared corporate services, introduce risk management tools and reduce lead times for management reporting.**

The company developed a Value Management scorecard that set financial goals for each of the 3 value drivers:

- **% Internal Rate of Return (IRR)**
- **Payback period (months)**
- **Total return (in millions of US$)**
- **Total Capital Expenditure (in millions of US$)**

In addition, the sponsors established a governance structure to monitor the project performance and make the necessary adjustments along the way (see model in figure 24).

Source: gA
**Finally, Business Process Digitization is All Encompassing, Comprising Not Only Technology But Also Operations and People**

**Business Process Digitization**

![Diagram of Business Process Digitization]

Source: gA
A CALL FOR ACTION
Unless a company is born digital, the fundamental re-creation of an enterprise is an important process where business assumptions that were defined almost at the firm’s inception are put into question, and a new operating model is defined.

Imitation approaches that merely copy what industry leaders have done in other environments represent a dangerous path.

Each company operating in particular competitive environments is a one-of-a-kind system that needs to find the approach to digitization that fits best.

Therefore, the reinvention of the digital enterprise is unavoidable and requires considerable effort and management leadership.

This task is not only necessary for the future of the business.

The sooner Latin American businesses tackle this challenge, the earlier our region will be ready to compete at parity with the industrialized world in the digital future.

Delaying digital transformation of Latin American economies is not option if we want to ensure our future growth.
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