

Digital Transformation Roadmap: The Case of Nova SBE's Executive Education

A Work Project presented as a part of the requirements for the Award of a Master's Degree in Management from Nova School of Business and Economics



A project carried out under the supervision of **Luis Rodrigues**

Saras Kumar Nayak

2685

Master in Management

Abstract

Digital Transformation Roadmap: The Case of Nova SBE's Executive Education

This work project has been written in order to discuss Digital Transformation and use the case of **Nova School of Business and Economics** Executive Education activity. Right now, every business school in the world is struggling in the field of Executive Education program due to intense competition from other top business schools. In Portugal, besides Nova SBE, Católica Lisbon School of Business and Economics, Porto Business School, and ISCTE Business School are the main players. As this business segment (Executive Education program) of Nova SBE has been started in the 1990s and it is facing stiff competition from other business schools who are very active in this field. In our research, we tried to explain different conclusions of our study.

Contents

	Page No
<i>Introduction</i>	1
<i>Research Objectives</i>	1
<i>Literature Review</i>	2
<i>Current Situation</i>	14
<i>Methodology</i>	17
▪ <i>Stakeholders Review</i>	17
○ <i>Strategic Assessment</i>	17
<i>Framework and Work Plan for Digital Transformation</i>	22
<i>Recommendation</i>	27
<i>Reference</i>	27

Introduction

Now many organization wants to use technology to transform its business to achieve competitive advantage. Digital Transformation(DT) can be defined as “**The acceleration of business activities, processes, competencies and models to fully leverage the changes and opportunities of digital technologies and their impact in a strategic and prioritized way.**”(Edmead, 2016). Digital Transformation is not restricted to certain industries. Similarly, an interesting industry is the education sector which has different business areas for examples: Bachelor study, Master Study, Doctorate Study and Executive Education which may generate a significant amount of revenues. The Education industry has different challenges, there is competition in the industry and all universities claim to have competitive advantages over its rivals and they generate greater value. Different business schools around the world are competing for each other to attract best candidates for their program.

Nova School of Business and Economics (Nova SBE) is one of the top B-School in Europe and it is the No. 1 B-School in Portugal. It is the faculty of economic and management sciences, of the Universidade Nova de Lisboa.

There is no doubt many business schools have the best programs in their fields, but many business schools follow a different strategy and only focused on Bachelor, Master related study because these programs are highly demanded by the industry and the demand for Executive Education was uncertain. Investing in Executive Education was a risky business and many schools became bankrupt due to poor strategy. But the question is in the current situation, can Nova SBE’s Executive Education program get the same success in Executive Education sector which Nova SBE’s other Programs like Masters, MBA programs have already got it and what role does digital transformation play in the process.

Research Objectives

When we talk about the digital transformation of any organization, a misconception comes in our mind that it is all about changing or implementing new technology in the organization to reach organization goal. This misconception which I tried to address in my work project. This work project is carried out to develop a digital strategy for Executive Education program in Nova SBE. This project is designed in a consulting work project format where Nova SBE can use digital technology to develop a digital business strategy for its Executive Education Program to improve its core business process. Currently Nova SBE Executive Education program is facing strong competition from its competitors who are in this Executive Education business in Portugal for many years and my job is to study and analyse the problems and challenges and develop a digital strategy plan for its Executive Education program so that it can overcome its challenges by digitally transforming its 5 key areas of

Nova SBE Executive Education unit: **Strategy & Culture, Staff & Customer Engagement, Process & Innovation, Technology, and Data & Analytics** which we will explain in details in later stage.

Literature Review

Introduction to Digital Transformation

The use of Electronic and Information technology to automate production started in the Third industrial revolution. Now a Fourth Industrial Revolution is building on the Third, the digital revolution was started by 31-year-old German civil engineer called Konrad Zuse with the Z3 computer 75 years ago (Abbany, 2016). Since then digital technology has evolved from transistor to smartphone and the digital revolution has been driven by two major innovations one is the personal computer and the another one is the internet (ISAACSON, 2014). Digital revolution is characterized by a mixture of technologies which is distorting the lines between the physical, digital, and biological spheres (Schwab, 2016). To embracing the 4th Industrial Revolution, business leaders in Asia Pacific are showing urgency to transform their business activity using technology. 80% of them believes that they need to transform to digital business to enable future growth and only 29% said that they have a digital strategy in place today (Networks Asia staff, 2017). The economic and social implications of digitalization are raising fundamental questions about the wider impact of digital transformation. Business leaders are facing with the strategic implications of digital transformations for their organizations business model, industry ecosystems, and society. These leaders are right to be worried, because, Digital Transformations potential impact to real-world business results.

Digital Disruption

Digital transformation takes place due to external change – specifically, changes by modern technologies which threaten the success of current business model and challenge the strategic roadmaps. This change is called **Digital Disruption** (Bodin, 2016).

Digital disruption has happened over the last three decades (Oracle Corporation, 2016).

- Initially in 1990 when the first wave came, sectors such as music, retail, photography, and video were all disrupted by new entrants or new players who were embracing digital technology.
- The 2nd wave came in 2000 when TV, News, Travel and recruitment sectors were disrupted by YouTube, Internet, Social Media, online job boards etc.
- From the 2010s onward, industry is facing the third wave of digital disruption, sector such as retail marketing, automotive, finance and healthcare were disrupted by new entrants or new players.

Waves upon waves of digital disruption

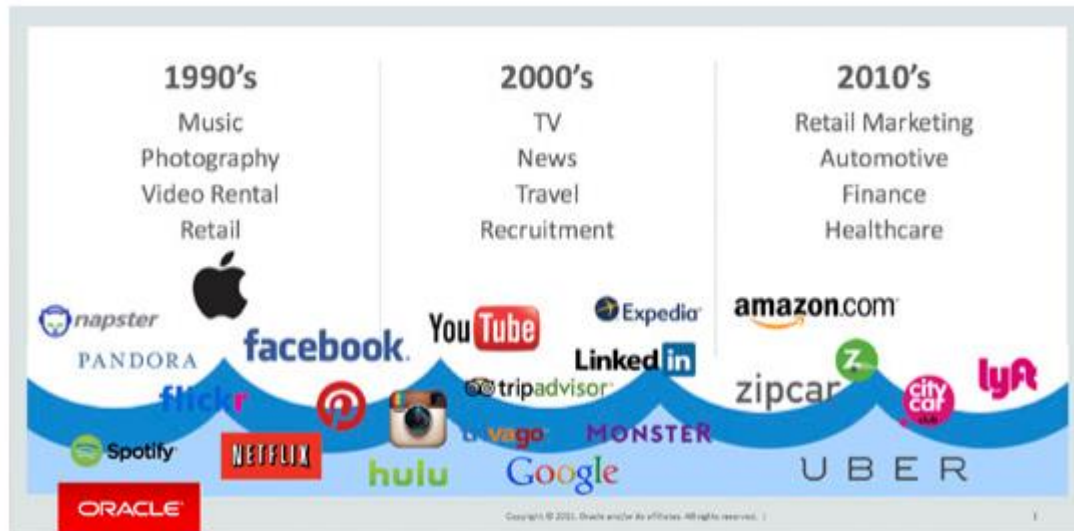


Figure 1 Source: Oracle

Financial impact of disruption

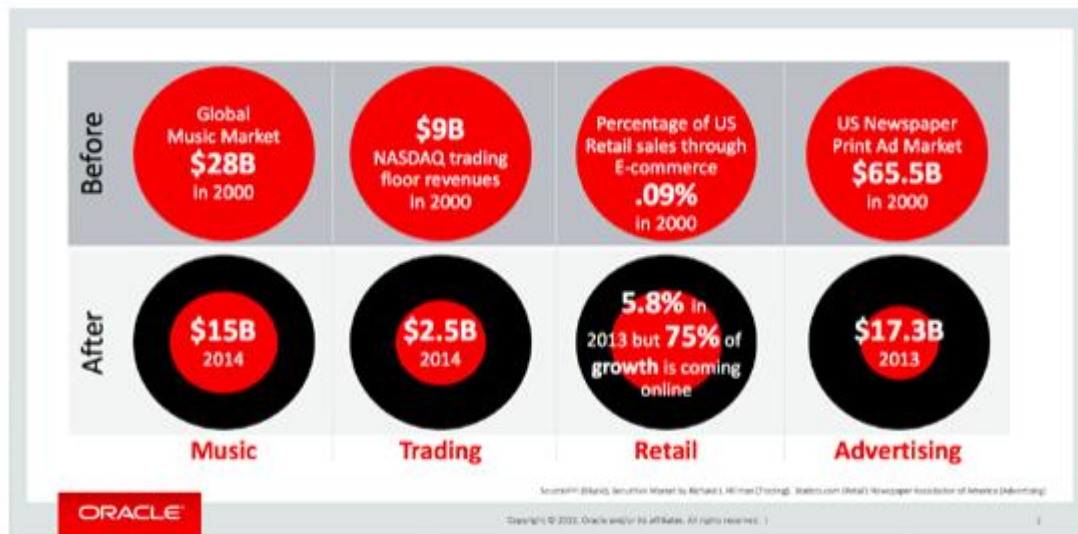
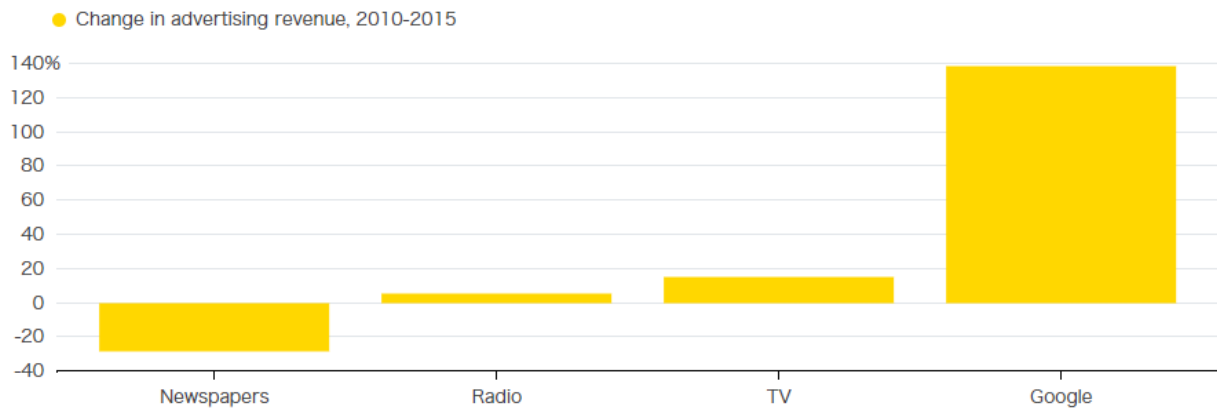


Figure 2 Source: Oracle

In Figure 2, you can see how different sectors has been affected by digital disruption and how it is financially impacting other industries. For example- The newspaper print advertise market has been hugely affected by digital disruption and its total market value has been reduced from \$65.5B to \$17.3B due to digital disruption by the digital ad (Google, Facebook). There is no question about Google and Facebook that they have almost killed free media(Ovide, 2016) because newspapers were primarily dependent on revenue coming from advertising. In [Figure 3], you can see the percentage change in advertising revenue from 2010 to 2015 for newspapers dropped to 28.6% and Google increased to almost 138.7%. The Education is one of the industry is being disrupted the most by digital(Grossman, 2016).



Sources: Magna Global, Bloomberg Intelligence and Google filings.

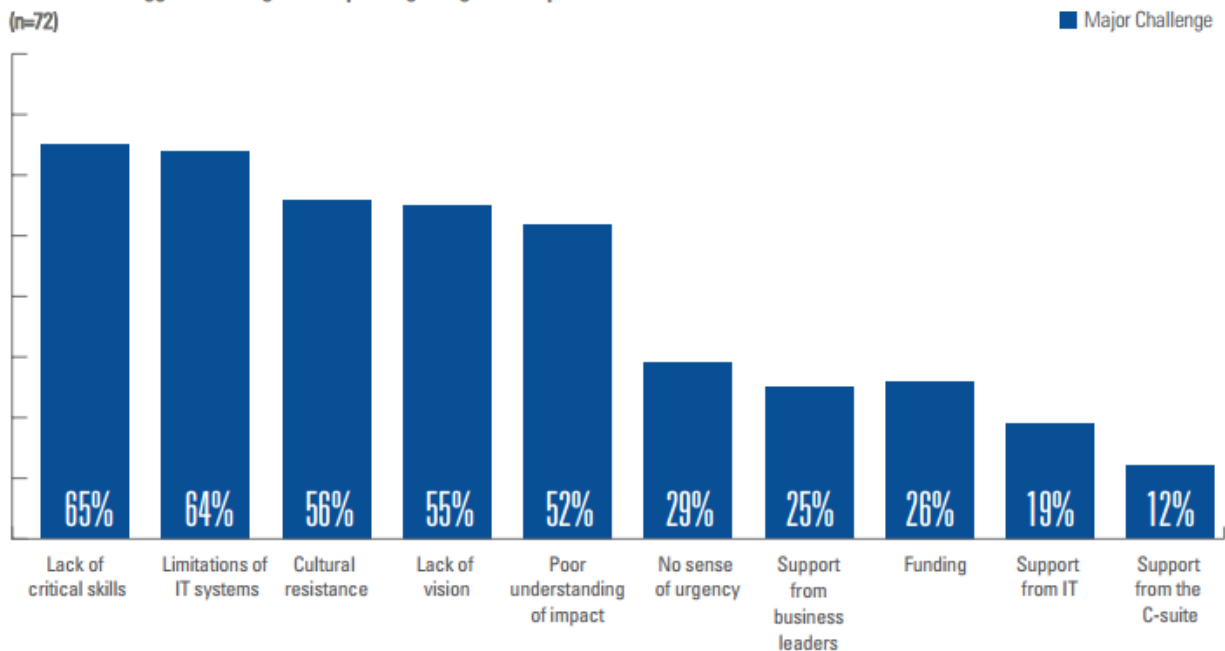
Figure 3 Source: Bloomberg

Responding to Digital Disruption

According to the survey conducted by KPMG, 65% of respondents mentioned that a **lack of critical skills** and 64% mentioned that **the limitations of IT systems** as their biggest challenges in responding to digital disruption (International, n.d.). Nobody can ignore other challenges in responding to digital disruption. There is no easy solution for these challenges created by disruption, only through sharp vision will help you to tackle these challenges.

What are the biggest challenges in responding to digital disruption?

(n=72)



Source: KPMG Global CIO Advisory Pulse Survey 2014

Figure 4 Source: KPMG

Definition of digital transformation

Different organizations and individuals have defined Digital transformation in many ways.

Here “Digital transformation” refers to **“The strategic use of digital content, technologies, and practices to transform the ways that institutions connect with and engage their customers and prospects”** (Elliot, Kay, & Laplante, n.d.).

The Capgemini research paper specifies digital transformation as: ***“The use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements such as enhancing customer experience, streamlining operations or creating new business models”*** (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2013).

Similarly Altimeter Group research paper on behalf Cognizant defines digital transformation as follows: ***“The realignment of, or new investment in, technology, business models, and processes to more effectively compete in an ever-changing digital economy”***(Solis, n.d.).

From Cisco perspective, it is defined as ***“Digital Business Transformation is the application of technology to build new business models, processes, software and systems that results in more profitable revenue, greater competitive advantage, and higher efficiency”***(Cisco, n.d.-a).

Analysis of the digital transformation of Educational institutions

The key to digital transformation in education business is

- **Digital Teaching, Learning and Research:** Use technology to create innovative ways of teaching, learning, and research to increase admissions and retention.
- **Digital Campus and Communities:** Transform the old educational environment to reduce costs and deliver the wonderful experience for students, staff, and stakeholders.
- **Digital Institution:** Deliver staff, building, and energy efficiency using technology.

According to MIT Sloan Management Review, ***“Strategy, not technology, drives digital transformation”***(Kane, Palmer, Phillips, Kiron, & Buckley, 2015). To clearly understand what is a digital strategy, first, we need to understand the terminology used in this section.

Accenture has refined the definition of digital and strategy as ***“Digital is the application of information and technology to raise human performance”*** and ***“Strategy is setting a direction, sequencing resources and making commitments”***(McDonald, 2015).

The main objective of developing a digital strategy for educational institutional is to create a distinctive brand in a particular geography, improve financial stability, and gain academic excellence. But, the strategy should also indicate the areas that there is a potential for an educational institution to be ‘digitally disrupted’ by a rival institution with a greater digital offer for students and staff(Cisco, n.d.-b).

To avoid digital disruption by the competitor and efficient and cost-effective business to deliver services, educational institutions are adopting digital strategies to increase the size of its student body, and increase research participation, through enhanced brand and academic excellence. Like other businesses, education institutions have a complex business model, significant numbers of staff, significant numbers of buildings and class rooms, and an increase in bills for energy and other utilities. To effectively manage these resources and their cost, digital technology has a key role to play. It is now clear now that every organization including educational institutions need a digital strategy if they want to achieve their business objectives.

Drivers of Digital Transformation

Before start digital transformation process, every organization must recognize the drivers of digital transformation. As per the study conducted by Brian Solis and Jaimy Szymanski, according to them the top drivers of the digital transformation of any organization can be Customer Experience, growth opportunity in new markets, competitive pressure and new regulatory and compliance(Solis & Szymanski, n.d.). In their study, 55% cite “evolving customer behaviours and preferences” as their top driver of digital transformation and also 53% mentioned that “growth opportunities in new markets” as a driver to reach new customers and to expand markets.

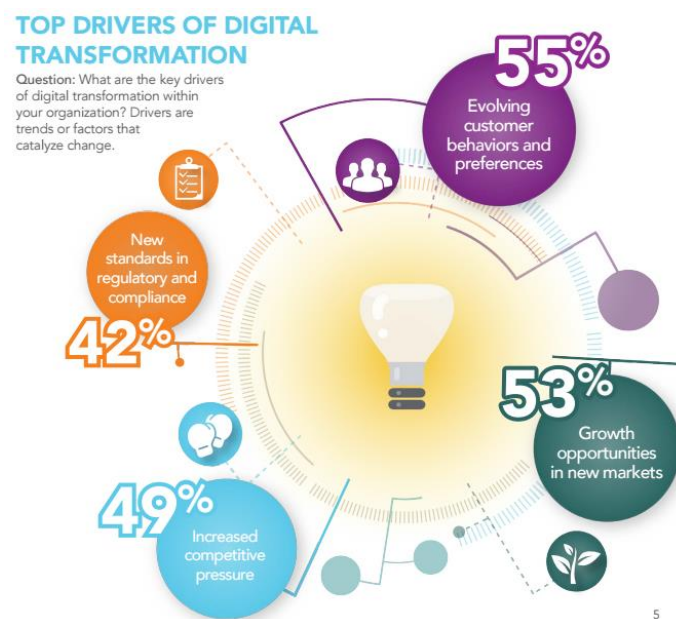


Figure 5 Source: Altimeter

A similar study was conducted by Forbes Insights to identify Top External Drivers of Digital Transformation(Rogers et al., 2016), according to them, 41% says new business models are the top driver of digital transformation followed by new technologies (40%)[Figure 6]. The main reason for digital transformation is to achieve business goals, it is a positive sign that new business models are the top driver of digital transformation.

Another example we can take from Microsoft who did the similar survey and found out the top three drivers for different industries are [Figure 7] are improving customer experience, optimize operations and survival as a business(Hodson, 2016). The last driver “**survival as a business**” is a big statement for the organizations which shows how digital transformation is important for the future success of organizations.

Top External Drivers of Digital Transformation

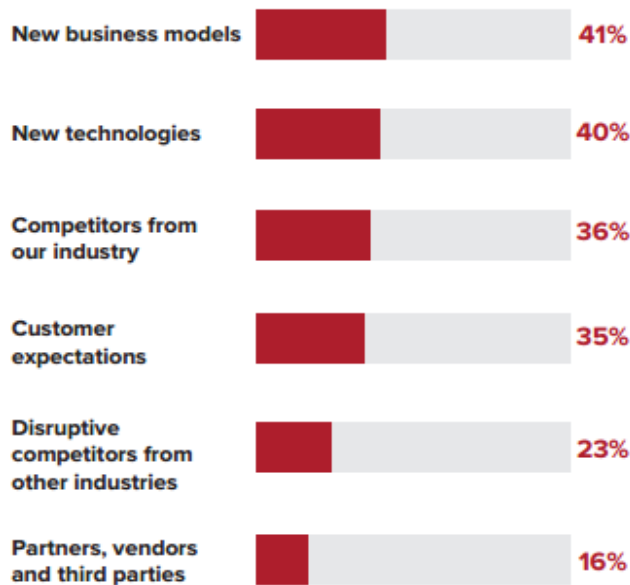


Figure 6 Source: Forbes Insights

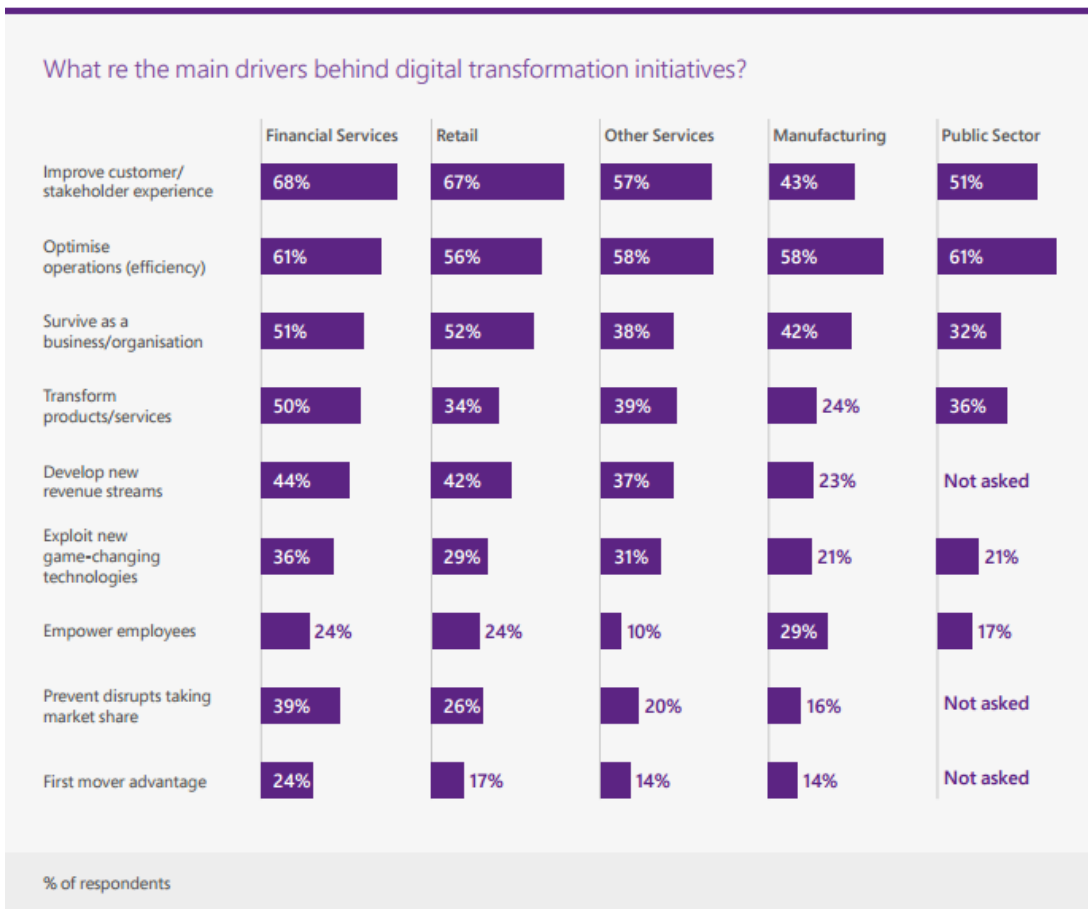
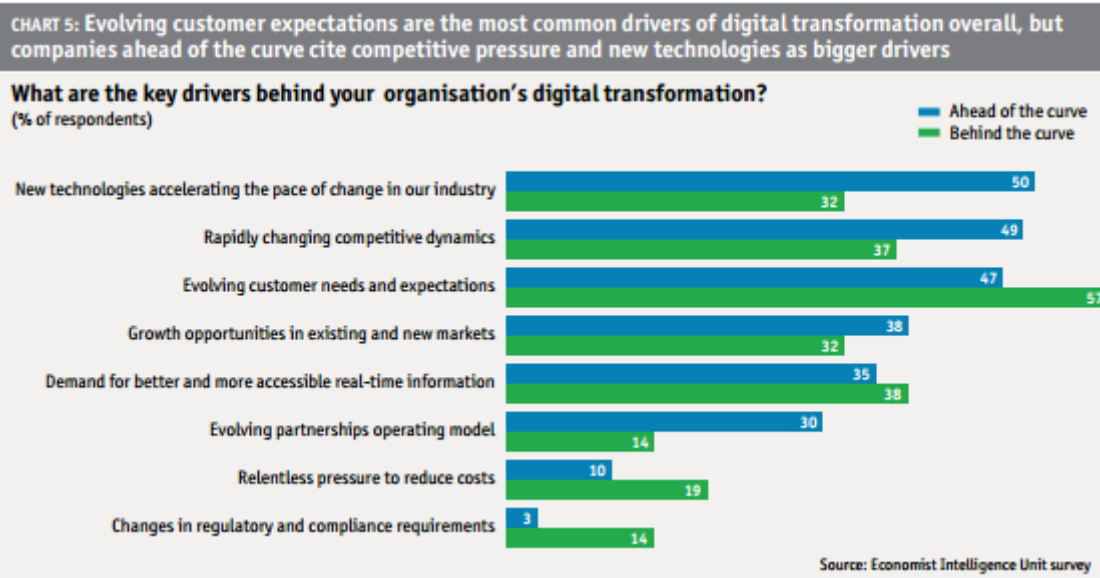


Figure 7 Source: Microsoft



After analyzing all the studies conducted by different organizations, we have assumed that these are the top drivers of Digital Transformation for Nova SBE Executive Education Unit:

- Improve customer experience
- Optimise operations
- Growth opportunities in new markets
- Increased competitive pressure
- New business models
- Develop new revenue streams

Barriers to Digital Transformation

As digital transformation is important for any organizations, but the question remains **“Why are so many organizations still unable to execute?”**. There is no doubt digital transformation will bring benefits for employer and staffs.

Chris Davis, a member of Russell Reynolds Associates’ Digital Transformation Practice says **“Digital transformation’s greatest barrier is organizational ambiguity. Many companies are struggling to coordinate the roles played by core digital teams, IT, and marketing. Successful digital strategies require an integrated approach with clear delineation of governance and decision rights, and the institution of joint metrics across shared areas of oversight.”**(Augustson et al., 2017)

According to the research conducted by CGI, cultural change is the top barrier to implementing digital transformation(Mccuaig, 2016) worldwide. Top barriers to digital transformation are[Figure 8](Mccuaig, 2016):

Top Barriers to Digital Transformation



Figure 8 Source: CGI

Similarly, Spiceworks conducted a survey on behalf of HPE, it identified decrease in IT budgets as the main barrier challenging organizations when it comes to accomplishing digital transformation followed by competing for business or IT priorities, limited employee and skills, and insufficient technology solutions[Figure 9](“The Path to Digital Transformation,” n.d.).

Top 5 challenges experienced with digital transformation:



Figure 9 Source: HPE

According to business leaders in the Microsoft Asia Digital Transformation Study, the top barriers to digital transformation in Asia Pacific are[Figure 10](Microsoft Asia News Center, 2017):

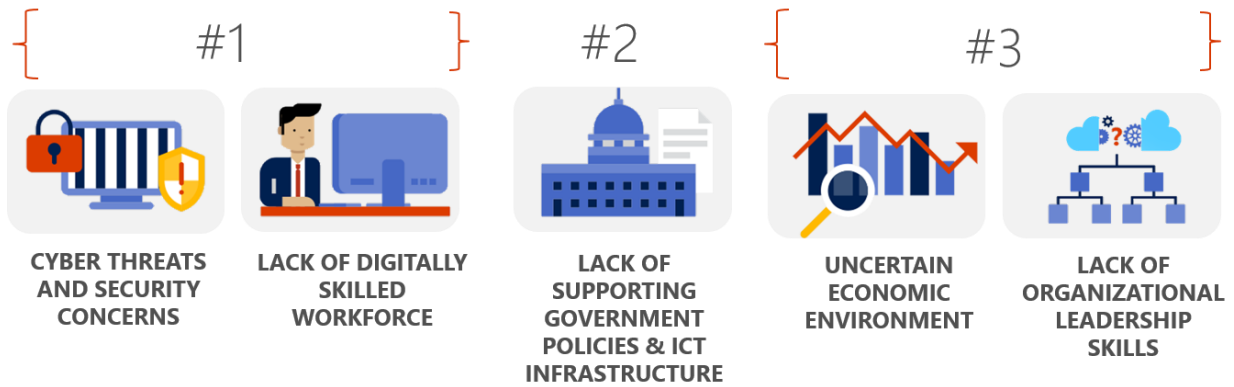


Figure 10 Source: Microsoft Asia News Center

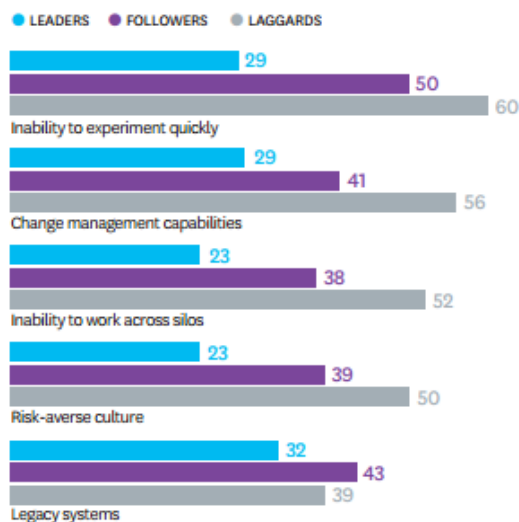
In Figure 10, Microsoft study clearly mentioned that not only security threats but also the lack of skilled workers in the organization are the top barriers to digital transformation.

Also, Harvard Business Review Analytic Services global survey specifies, the top barriers to digital transformation are mentioned in [Figure 11] (Harvard Business Review, n.d.) are change management capabilities, inability to experiment quickly, legacy systems etc. After analyzing all the studies conducted by different organizations, we have assumed that these are the top barriers for Nova SBE Executive Education Unit to implement Digital Transformation:

- Lack of skilled workers
- Lack of skills/experience
- Lack of digital culture
- Legacy system or technology
- Limited budget
- Lack of organizational leadership skills

TOP FIVE BARRIERS TO DIGITAL TRANSFORMATION

Percentage indicating to what extent each of the following is a barrier to their organizations' use of digital technologies. [8-10 ON A 10-POINT SCALE]



Source: Harvard Business Review Analytic Services Survey, June 2016

Figure 11 Source: Harvard Business Review

A Roadmap to Transformation

Nova SBE recognises that digital technologies are primarily changing the nature of operations, customer services, and executive education business growth. Digital transformation concerns all parts of the organization which includes business model, funding or finance, organizational culture, human capital strategy, operating model, technology, process, talent and more to create an integrated digital enterprise capable of creating innovative and effectively ways to run processes, transform and grow their business(CGI, 2016). To achieve these benefits, a clear digital strategy and roadmap are required—one that is focused on both legacy and digital technology and processes to release value, generate insights and focus on the customer(CGI, 2016).

According to the survey conducted by Spiceworks on behalf of HPE revealed that the top 5 outcomes that organizations hope to achieve through digital transformation(“The Path to Digital Transformation,” n.d.):

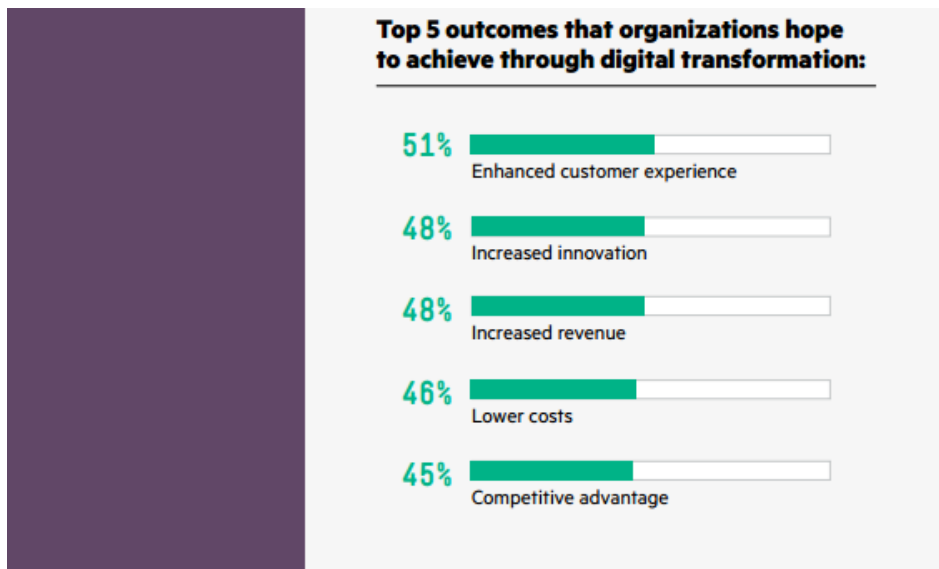


Figure 12 Source: Spiceworks



So, we have assumed that digital transformation may help to improve Nova SBE competitiveness in the executive education industry by:

- **Maximizing the return on investment of new program and services**
- **Improving sales & marketing, finance, and back office operations and reducing costs**
- **Enhancing the student and employee experience**
- **Lower cost and gain competitive advantages**
- **Improve Student satisfaction, loyalty, and retention**

For any digital transformation, leadership and strategy deliver successful transformation not only technology itself. Most Organization Digital transformation failed when they start with the technology and digital tactics. Starting with digital solutions, designing wonderful websites, creating a Facebook & Twitter page and hoping that Nova SBE should engage with its executive students, corporates client (Executives) through social media and implementing modern technology like

Digital Business Transformation is Organizational Change through the use of Digital Technologies and Business Models to Improve Performance (Wade 2015)

analytics, mobile, cloud application in Nova SBE's Executive Education unit to address major problems like student recruitment, fundraising, reduced costs and higher operational efficiency, greater classroom innovation. As these activities are necessary for any successful digital transformation but without clear business

direction, organization's vision, digital strategy, digital culture and a clear roadmap, it will not help Nova SBE for successful digital transformation. There is no doubt that digital investment is the right course of action for Nova SBE, but previously many organizations had similarly tried and struggled to create desired result. The failure rate is generally high, digital transformation failure rates range from 66% to 84% (Education, 2017)(Libert, Beck, & Wind, 2016). Digital Transformation failed when leaders who were responsible for transformation decides to create entirely new competencies and forces them to integrate into an organization with strong legacy cultures and operating models. As

digital transformation is not a one-time process, it is a journey guided by three questions.

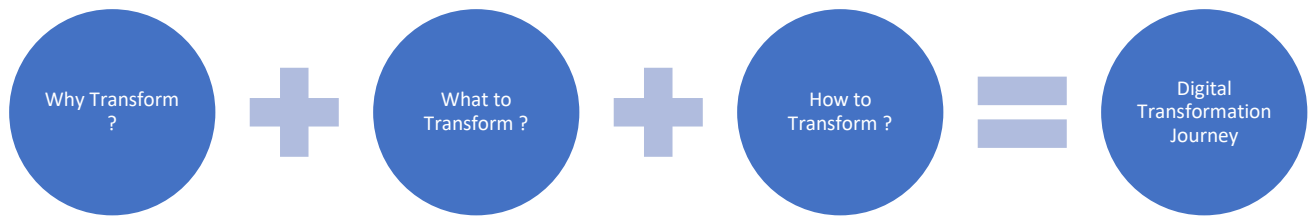


Figure 13 Digital Transformation Journey

Why Transformation?

This is the basic question was asked to Nova SBE Executive education unit and they mentioned the below reasons

- Increase sales
- Increase conversion rates
- Increase customer brand awareness
- Attracting and retaining students
- To improve speed to market
- Improve student experience
- Streamline business process
- Simplify IT services
- Optimize operations and infrastructure
- Increase FT rankings

What to Transform?

Top leadership from Nova SBE Executive education unit are fully aware of justification for the digital change. The next phase is “what to transform?”, many transformations can be done in the organization e.g. Business Model, Structure, People, Processes, IT Capability, Offerings, Engagement Model. But to do this transformation, Nova SBE Executive Education unit needs to develop a digital transformation framework. It is important to have a clear idea where transformation is required.

How to Transform?

This question is the hardest to answer. Many digital business transformations failed due to the flaw in the execution plan. To answer this question, we mostly conducted Face-to-Face interviews with executive employees of Nova SBE Executive Education unit. I built a questionnaire as the common guide for all interviews.

One important aspect of digital transformation is “**How to measure the effects of organizations’ digital transformation efforts?**”. Successfully implementing digital transformation is only the first step, assessing how it is impacting the business, and helping in reaching its objectives, is a whole different challenge. Coleman Parkes Research has designed the **Digital Transformation Business Impact Scorecard [Table 1]** to measure the effects of organizations’ transformation efforts. This scorecard has 14 KPIs across different areas such as business agility, business growth, customer focus and operational efficiency(Coleman Parkes Research, 2016).

BUSINESS AGILITY <ul style="list-style-type: none"> • Time-to-decision/time-to-act on new opportunities • Speed to market (time to develop/ test and release new apps) 	BUSINESS GROWTH <ul style="list-style-type: none"> • Revenue growth, new revenue sources • Digital reach • Competitive differentiation
	KPI
CUSTOMER FOCUS <ul style="list-style-type: none"> • Customer experience • Customer retention • Customer satisfaction 	OPERATIONAL EFFICIENCY <ul style="list-style-type: none"> • Employee productivity • Employee recruitment and retention • IT-related costs • Quality of development processes/apps (# of defects) • Leverage of third-party developer innovation • Operational or process efficiency

Table 1 Source: Coleman Parkes Research

Current Situation

Nova SBE is the leading player in the higher education sector in Portugal. The school has played a leading role in this sector but this was accelerated after the implementation of the Bologna agreement about 10 years ago, which led to the creation of a single market in the Europe for the Master's program. In this context because organizationally the school should focus Executive Education which was left behind. Effectively most people were not even aware of Executive Education activity at Nova SBE. Until recently this unit operates in different geographical facilities in the Campus de Campolide. Nova SBE is one of the biggest executive education provider in Portugal which attracts executives not only from large and small industries but also from individual executives from large corporation who wants to enhance their career and skills set.

The Católica Lisbon School of Business and Economics and Porto Business School are the two biggest competitors of Nova SBE who also offers Executive Education program in Portugal. Both schools offer both custom and open Executive Education program in Portugal and if you see the last 7 years of FT executive education rankings (Both Open and Custom program), Católica Lisbon School of Business has outpaced Nova SBE.

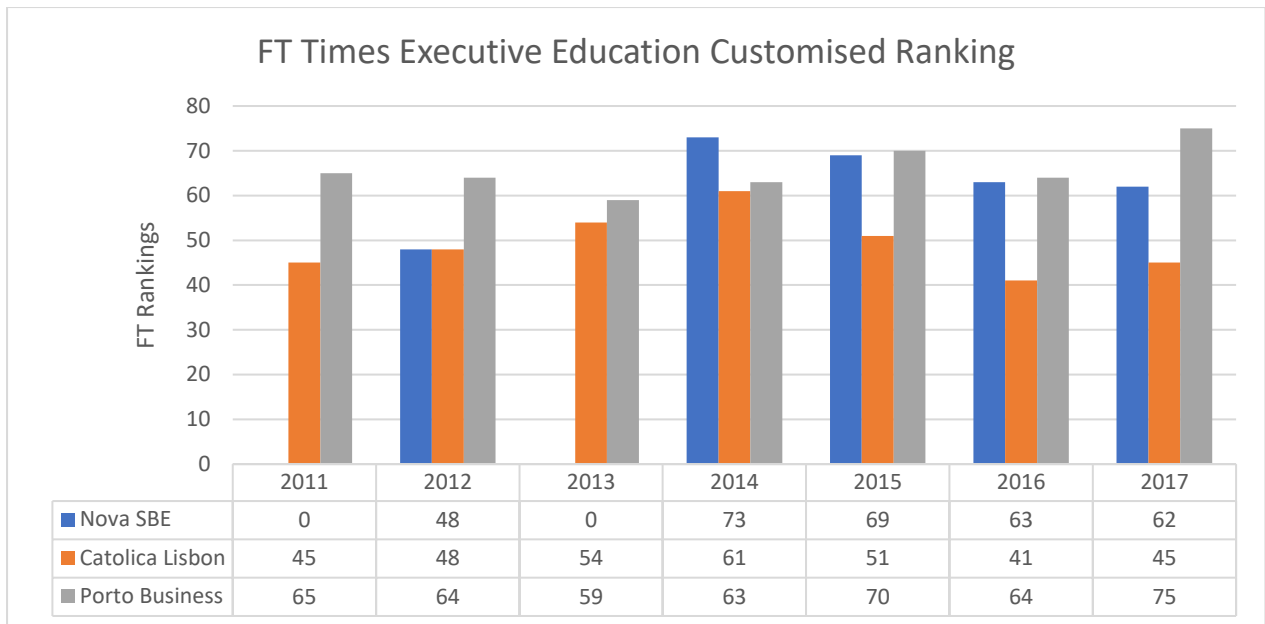


Figure 14 Source: Financial Times

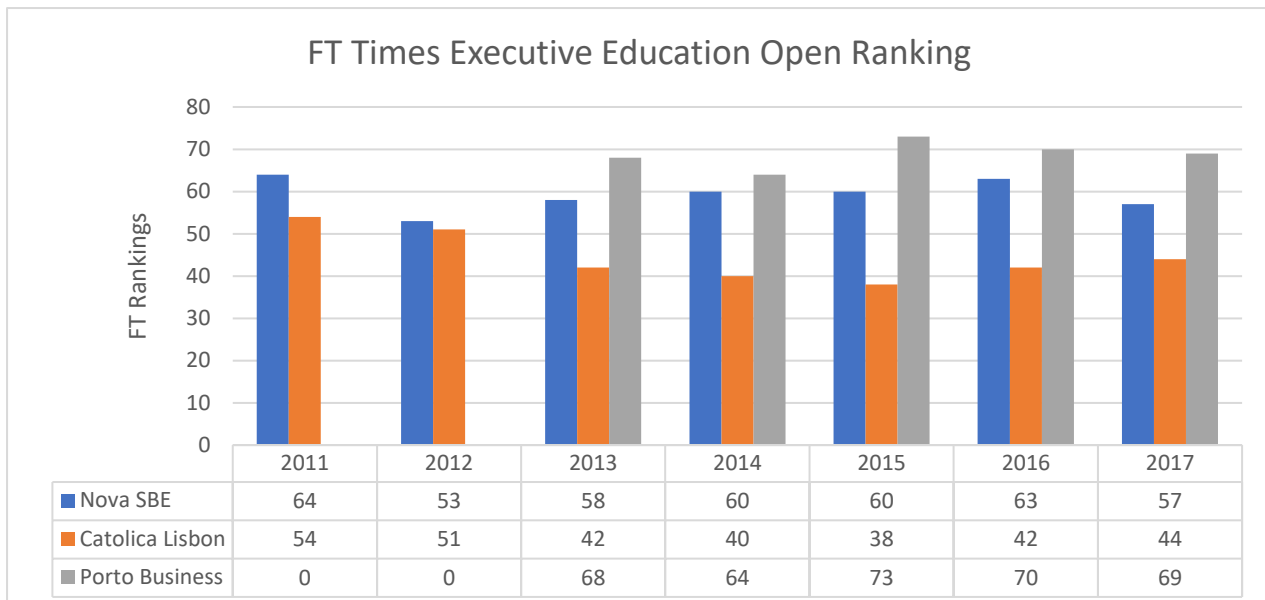


Figure 15 Source: Financial Times

Today Nova SBE is not only facing competition from other business schools but also it is also facing strong competition from different online training service providers (MOOC: Massively Open Online Course) like McKinsey Academy, LinkedIn’s Lynda.com (Jones, 2016), Udacity, Coursera, edX, Udemy etc.(Boyde, 2013) which are disrupting the current traditional business education models of business schools across world and reshaping the business education market(HORN, MICHAEL AND CHRISTENSEN, 2013). Some MOOCs platforms[Refer Figure 15], including Coursera and edX, partner with top universities to offer different courses(Chan, 2016). MOOC providers are directly competing with business schools what we see a direct threat to Nova SBE executive education program in the future. Clayton Christensen of Harvard Business School considers MOOCs a potent “disruptive technology” that will kill off many inefficient universities. “Fifteen years from now more than half of

the universities [in America] will be in bankruptcy,” he predicted last year(From the print edition | Briefing, 2014).

Salient features of MOOCs which attract millions of students every year:

- Few courses are free
- Low-cost courses
- Autonomous learning
- Easily accessible by computer, smartphone or tablet with internet connections
- Convenient and flexible to learn at home, office, café etc.

Currently, executive education is dominated by corporate universities programs offered by consulting firms such as McKinsey, PricewaterhouseCoopers, and Deloitte(Scheurer, 2015).

Subject	Course name	School/ Organisation	Platform	Certificate
Filter <input type="text"/> 407/407				
Business strategy	Advanced Business Strategy	University of Virginia	Coursera	✓
Business strategy	Advanced Competitive Strategy	Ludwig-Maximilians-Universität München (LMU)	Coursera	✗
Business strategy	Anticipating Your Next Battle, in Business and Beyond	HEC Paris	Coursera	✓
Business strategy	Business Growth Strategy	University of Virginia	Coursera	✓
Business strategy	Business Strategy	University of Illinois at Urbana-Champaign	Coursera	✓
Business strategy	Competitive Strategy	Ludwig-Maximilians-Universität München (LMU)	Coursera	✗
Business strategy	Corporate Strategy	University of Illinois at Urbana-Champaign	Coursera	✓
Business strategy	Foundations of Business Strategy	University of Virginia	Coursera	✓
Business strategy	Introduction to Strategic Management	Indian Institute of Management, Bangalore	edX	✓
Business strategy	Strategy and Sustainability	Iese Business School	Coursera	✓
Business strategy	Strategic Management	Copenhagen Business School	Coursera	✓
Business strategy	Strategic Management (StratMgt)	Open Training Institute	Open2Study	✓
Business strategy	Strategic Planning and Execution	University of Virginia	Coursera	✓
Business strategy	Launch Strategy: 5 Steps to Capstone Experience	Michigan State University	Coursera	✓
Business strategy	Strategy Formulation	Copenhagen Business School	Coursera	✓
Business strategy	Strategy Implementation	Copenhagen Business School	Coursera	✓
Career development	Becoming Part of the Globalised Workplace	National University of Singapore	Coursera	✓

Figure 16 Source: Financial Times Mooc Tracker

Under this circumstance, Nova SBE Executive Education Unit is following the below business model [Refer Table 2]. They are mainly targeting both domestic students and corporates in Portugal. As most of the courses are in Portuguese, international students are not aware of courses in English. Sales operations are carried out by both traditional channel and digital channels. Some back-office functions (e.g. Digital Marketing) are outsourced to reduce cost and drive efficiency.

Customer	Domestic	International	Corporate
Product Offering	Short term Executive Program (In Portuguese)	<ol style="list-style-type: none"> 1. Executive MBA Program (1 Year-Both English & Portuguese), Separate from Lisbon MBA and include in Executive Education unit 2. Executive Master (1 Year-Both English & Portuguese) 3. Short term Executive Program (In English) 	

<i>Program Disciplines</i>	<ul style="list-style-type: none"> ▪ Finance ▪ Innovation and Entrepreneurship ▪ Management & Strategy ▪ Operations ▪ Marketing & Customer Services ▪ Leadership & Talent Development 		<ul style="list-style-type: none"> ▪ Digital
<i>Sales</i>	Onsite meeting	Digital	Partnerships
<i>Delivery</i>	On Campus	Digital	Partnership
<i>Student Services</i>	Student Administration		Career Center
	Customer relationship management (cloud)		
<i>Back Office</i>	In House		Outsourcing

Current Areas of Focus
 Potential Areas of Focus in the Future

Table 2 Sources: EY("University of the future," n.d.)

Methodology

This thesis is formulated on the theoretical basis of the digital transformation of any organization. Secondary research was conducted to assess the current situation of digital transformation in Nova SBE Executive Education Unit by interviewing their employees. Most of them are associated with day

to day activities of the organization who knows all the functions very well.

Stakeholders Review

There is mainly four type of stakeholders associated with Nova SBE Executive Education program.

1. Customers (Students or corporate)
2. Employees from Nova SBE
3. Top management from Nova SBE
4. Future Employers

Digital Transformation of Nova SBE Executive Education program is not about reaching a certain stage or reaching a final goal. It is a continuous activity of process improvements and innovation, effectively engaging with students (companies and executives) over a period where there is no stopping point in the future, from time to time digital transformation must take place.

Strategic Assessment

Before we go for any transformation, we need to find out answers to various questions:

What are the driving forces and uncertainties that are likely to affect performance and activities of Nova SBE Executive Education program in the future?

As per STEEPLE analysis(Jurevicius, 2013),

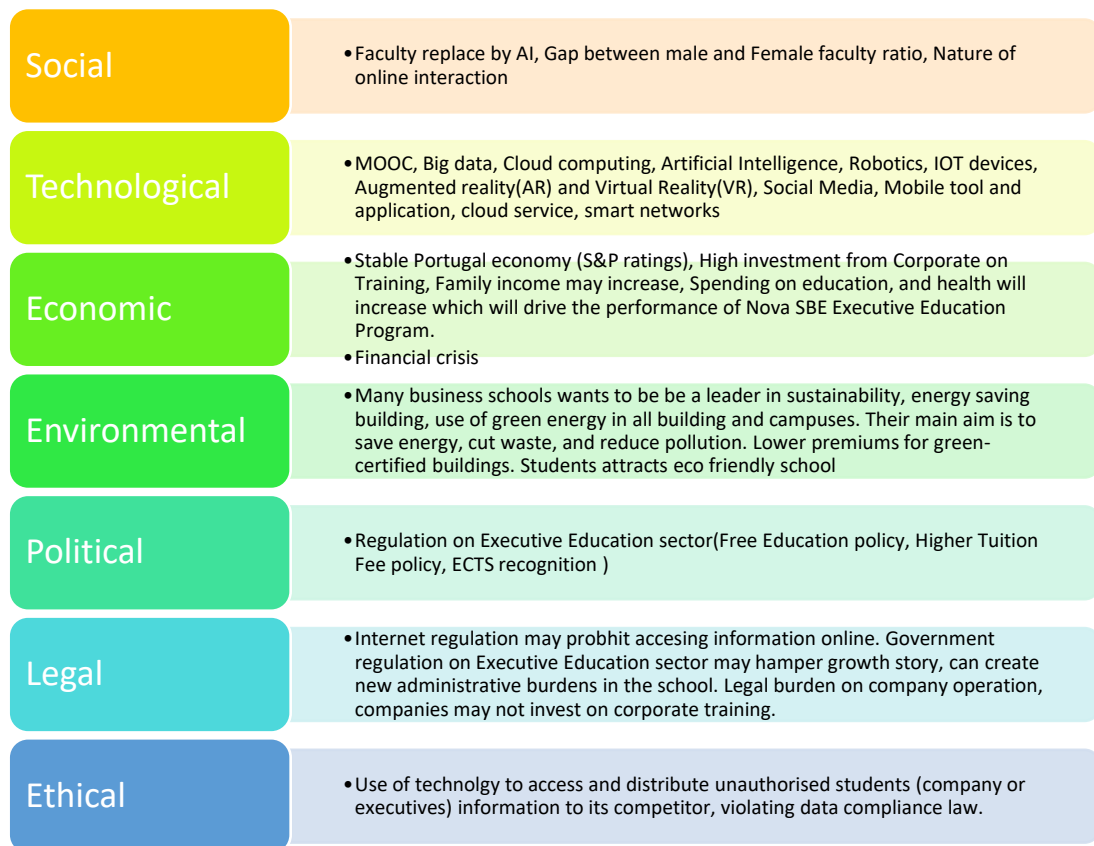


Figure 17 STEEPLE Analysis

From STEEPLE analysis, it highlighted numbers of major driving forces which may transform the executive education sector in Portugal.

Key Factors and Environmental Forces

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Portuguese economy ▪ Mobile tool and Application ▪ Financial crisis ▪ Data compliance law ▪ Legal burden on companies ▪ Consumer spending on Education ▪ Government Regulation on Executive | <p>Education</p> <ul style="list-style-type: none"> ▪ Profitability ▪ Customer Satisfaction ▪ Increased go-to-market ▪ Innovation in information and communication technology (MOOCs, Web-based training apps) |
|--|--|

- Organizational need for skill development

Out of which we concluded that **Innovation in information and communication technology (ICT)**, **Government Regulation on Executive Education** and **Organizational need for skill development** are the most three critical uncertainties ranked by uncertainty and importance to Nova SBE Executive Education program

What are your strengths and weaknesses of Nova SBE Executive Education Unit?

To get the answer of 2nd question, we did TOWS matrix analysis(D. Watkins, 2007)(Wehrich, n.d.).

	<p>External Opportunities (O)</p> <ol style="list-style-type: none"> 1. Improve learning and training methods and students experience 2. Re-organise the current school's organization's hierarchy structure 3. Offer online training alternatives to in-person training 4. New target markets (Latin America-Brazil, Africa-Portuguese speaking countries and developing countries) 	<p>External Threats (T)</p> <ol style="list-style-type: none"> 1. Competition from traditional business schools in Portugal and EU 2. Consultancy firms like PwC, Boston Consulting Group and Bain are the new rival in Executive Education sector 3. MOOCs is the disruption of Executive Education (Already started by US b-school) 4. Partnership between Other B-schools and MOOCs providers like Udacity, Lynda.com, Coursera, Udemey etc. 5. Financial crisis and slow economy growth in China
<p>Internal Strengths (S)</p> <ol style="list-style-type: none"> 1. Experienced Faculty 2. School reputation 3. Triple accreditation 4. Good corporate connection in Portugal 5. Good location 6. Partnership with Universities in EU and abroad 7. Top European school ranking in FT (#23) 8. Excellent top leaderships 	<p>SO Strategies</p> <p>Leverage strengths to maximise opportunities=Attacking Strategy</p> <ol style="list-style-type: none"> 1. Increase presence in Latin American and African countries by offering both MOOCs and on class training, As Africa is an emerging market for Executive Education. 2. Partnership with MOOCs service providers and universities which are already using MOOCs service platform to its students 	<p>ST Strategies</p> <p>Leverage strengths to minimise threats= Defensive Strategy</p> <ol style="list-style-type: none"> 1. Offers discount and custom oriented program to students. 2. More focus on local market students (Portuguese).

<u>Internal Weaknesses (W)</u>	<u>WO Strategies</u>	<u>WT Strategies</u>
<ol style="list-style-type: none"> 1. Lack of flexibility 2. Geographic Access Issue 3. Old infrastructure 4. Lack of vision and government regulation forbids to make strategic decision 5. Few collaboration with Other (Non-Portuguese) EU companies 6. No unique program to offer 7. Poor website experience 8. Low FT rankings (Both Open and Customized program) 	<p>Counter weakness through exploiting opportunities=Build strengths for attacking strategy</p> <ol style="list-style-type: none"> 1. Offers MOOCs in Latin American and African countries to reduce operational costs for better access to quality education. 2. Hire expert who has experience in building digital strategy from other b-school or organization for a short-term period and place him as CIO or CTO of the Executive Education program. 	<p>Counter weakness and threats=Build strengths for defence strategy</p> <ol style="list-style-type: none"> 1. Offers the same program and follow the same strategy (no change in current strategy).

Table 3 TOWS Matrix Analysis

What is the digital maturity level of Nova SBE Executive Education Unit?

It is essential for any organization to know the digital maturity level because only the digitally matured organization focus on integrating digital technologies such as social, analytics, mobile and cloud in the service of transformation. Digital maturity will measure the extent to which digital technologies will transform Nova SBE’s processes, talent engagement, and business models. The higher the maturity level, the better is for financial performance. Digital transformation maturity level depends on the following elements of the organization:

- 1) **Student experience** – They provide unique program and services to satisfy digital lifestyle of students.
- 2) **Program innovation** – They integrate digital technologies in order to improve services.
- 3) **Strategy** – They build digital strategy on exploiting the potential of digital technologies.
- 4) **Organization** – They provide digital competences.
- 5) **Processes** – They integrate and automate all processes digitally.
- 6) **Collaboration** – They integrate digital technologies within the organization to support and enhance communication, collaboration.
- 7) **ICT (Information and Communications Technology)** – They integrate IT infrastructures and information systems to launch new digital products, services, communication and transaction.
- 8) **Culture** – They build digital culture in the organization where workforce has clear understanding of digital technologies and digital skills.
- 9) **Transformation** – Top leaderships takes the first steps to initiate and manage digital transformation process and they are guided by a future roadmap.

Based on the interviews, several observations were made on different elements of Nova SBE executive education unit. The results are shown in the [Table 4].

	Low	Medium	High
Student experience	✓		
Program innovation	✓		
Strategy		✓	
Organization	✓		
Processes		✓	
Collaboration			✓
ICT	✓		
Culture		✓	
Transformation		✓	

Table 4 Analysis of Digital Maturity Elements

To assess the digital maturity level of Nova SBE Executive Education program, we used the digital maturity model [Figure 17] to evaluate digital maturity level and interviewed 5 employees from Nova SBE Executive Education unit who are actively involved in day to day operations.

Nova SBE Executive Education can be classified into one of the categories listed below:

- **Early Stage Organization-** You haven't started on the path to digital transformation
- **Developing Organization-** You are working on digital initiative
- **Mature Organization-** You are a digital leader






	EARLY	DEVELOPING	MATURING
 Strategy	Aimed at cost reduction	Aimed at improving customer experience and decision making	Aimed at fundamental transformation
 Leadership	Lacks awareness and skills	Digitally aware	Digitally sophisticated
 Workforce development	Insufficient investment	Moderate investment	Adequate investment
 User focus	Absent	Gaining traction	"Central" to digital transformation
 Culture	Risk averse; disintegrated	Risk tolerant; accommodates innovation and collaboration	Risk receptive; fosters innovation and collaboration

Figure 18 Source- Deloitte UK (Bellman & Eggers, n.d.)

The five dimensions of the digital maturity model such as strategy, leadership, workforce development, user focus and digital culture will play a critical role to assess digital maturity level of Nova SBE.

	Strategy	Leadership		Workforce		User Focus			Digital Culture		
	Coherent and Clear Digital Strategy	Leadership's understanding of digital trends	Leadership's skills to lead digital strategy	Investment in workforce skills	Workforce skills to execute digital strategy	Customer demands as driver of digital transformation	Objective of strategy to improve customer experience, engagement and transparency	Co-creation of digital services	More willing to experiment and adopt an agile, fail fast and fail quickly approach to risk	Digital improving innovative culture	Digital improving collaborative culture
Low				⚠				⚠	⚠	⚠	
Medium	⚡						⚡				⚡
High		☢	☢		☢	☢					

Figure 19 Analysis of digital maturity level

Based on the above assessments we concluded that Nova SBE Executive Education belongs to **Developing organisation** category. They have just emerged from **Early stage** organization to **Developing organization** with in 2 year.

Digital Transformation Framework and Workplan

“A digital transformation framework is the blueprint for how an organisation moves through a period of significant change because of the current evolving business conditions” (Storey, 2017). For this reason, a framework is proposed for Nova SBE Executive Education Unit [Figure 19]. This framework will guide all levels of the organisation through the journey. It will make ensure that every area of the business will be focused during the period of change. The framework will enable the strategy and roadmap that allows Nova SBE to evolve and success in the rapidly changing market conditions.

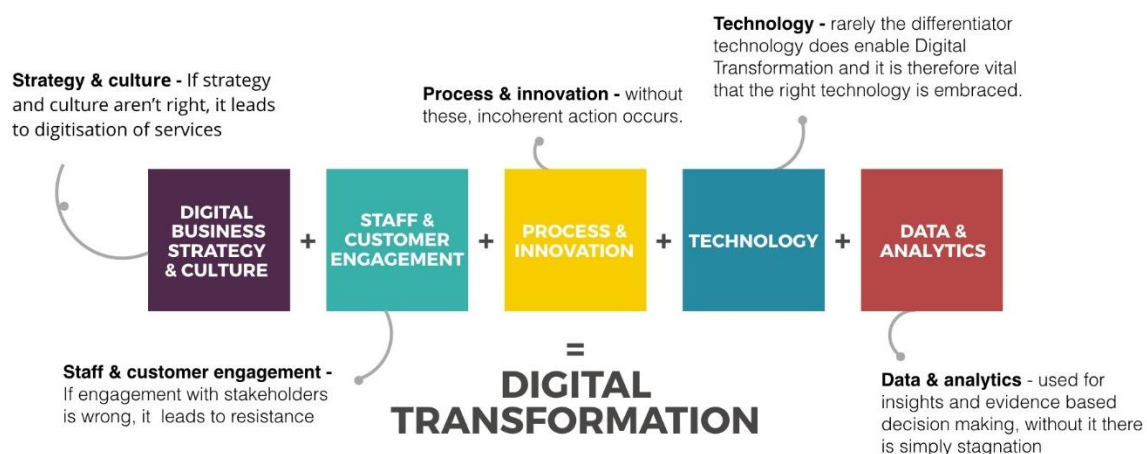


Figure 20- Source: ionology

Step 1: Digital Business Strategy

To begin the journey of digital transformation, Nova SBE must begin with their strategy and they should use principles of Digital Business Strategy which has been developed by Ionology(ionology, n.d.). These principles are the framework for developing digital strategy

Micro Analysis	Macro Analysis
<ol style="list-style-type: none"> 1. Know your yourself 2. Know your customer 3. Know your market place 4. Know your resources 	<ol style="list-style-type: none"> 1. Where are you now (Current Position)? 2. Where do you want to go (Engine of Growth)

Micro Analysis

Know Yourself	Know your Marketplace
<p>Diagnosis- Nova SBE must identify its problem or challenges that it wants to solve.</p>	<p>Competitors- Nova SBE must identify its main competitor in Portugal. If Nova SBE wants to be competitive, they should know their competitor size.</p>
<p>Strategic Vision-</p> <ul style="list-style-type: none"> ▪ Nova SBE must set their vision where do they want to see their organization in next 3, 5, and 10 year time. 	<p>Competitive proposition-</p> <ul style="list-style-type: none"> ▪ Understand competitor UVP. Compare their UVP with yours and find answer “How are they adding value for students?”
<p>UVP (Unique value proposition)-</p> <ul style="list-style-type: none"> ▪ Nova SBE must able to identify and express an effective UVP which will differentiate them from their competitor. ▪ Ask this question “what makes the value you add for students better than the competition?” 	<p>Competitive Force-</p> <ul style="list-style-type: none"> ▪ Currently market shares of most of the B-school (Executive Education program) in Portugal is unknown. Nova SBE needs to invest on market research. Currently Nova SBE has adequate no of resources which matches with its their competitor. But still you need to compare your resources with their resources.
Know your customer	Know your Resources
<p>Volume-</p> <ul style="list-style-type: none"> ▪ Analyse your executive education program demand in the market. 	<p>Time-</p> <ul style="list-style-type: none"> ▪ Decide at what time you have to start strategy development and make an action plan.
	<p>Talent-</p> <ul style="list-style-type: none"> ▪ Know your organizational skills ▪ Evaluate and develop organizational skills ▪ Understand organization talents, what does it need for and how can you use its full potential.
<p>Intent-</p> <ul style="list-style-type: none"> ▪ Understand your students need and expectation. ▪ Understanding their intent and being there to meet their needs is vital. 	<p>Cash-</p> <ul style="list-style-type: none"> ▪ Cashflow is a crucial factor in deciding which strategic path your organization should follow.

Macro Analysis

Nova SBE should do macro analysis using Ionology Digital Strategy Quadrant(Mckeown, n.d.) to find out where are they now in the Quadrant(their current position) and where they want to go in the Quadrant.

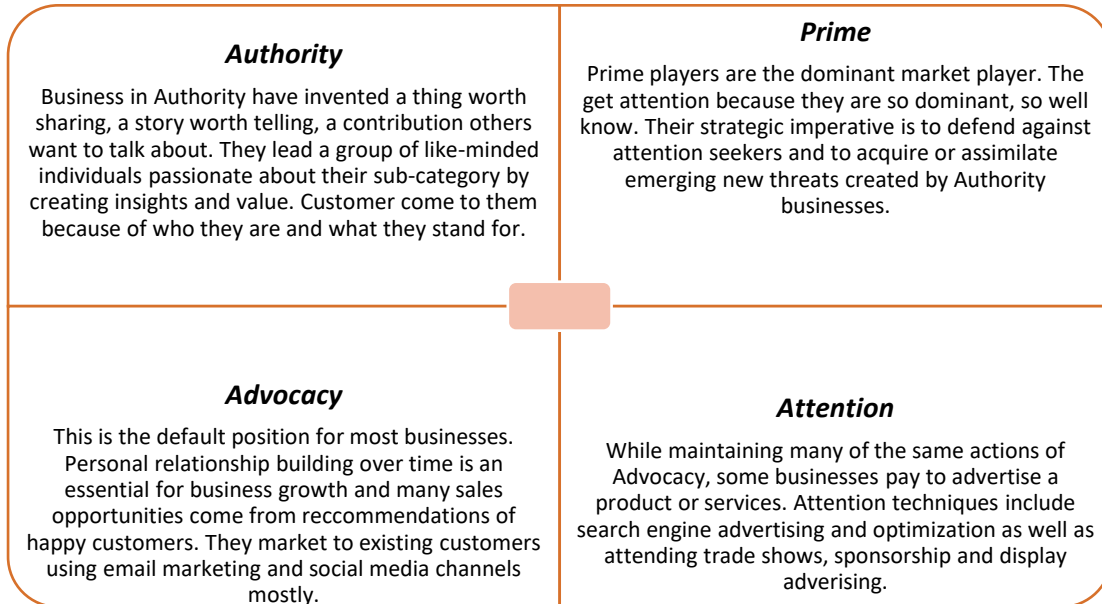


Table 5 Sources: Ionology



Figure 21 Source: Ionology

In this scenario web analytics tool can help you to find your starting position – how do customers

find you?. Once you know where you are, you can make 'a play' and move your market position where do you want to be?

Step 2: Culture, Employees and Customer Engagement

Culture-

- Top leaderships have vision for Nova SBE to build digital culture in the organization and workforce has clear understanding of digital technologies and digital skills. But the workforce is not willing to experiment and adopt an agile approach to fail fast or fail quickly to the risks due to fear. They are not willing to embrace operational changes and strategic partnerships as part of the vision.
- Digital has failed to create innovative culture in the workplace but successfully created collaborative culture in Nova SBE. I will blame top leadership for this reason. Top leaders had failed to motivate their employees to do so.
- Top leaderships participation is necessary to motivate their employees.

Employee-

- Leaderships should take initiative to motivate their employees to develop digital skills which is missing in the current environment.
- Develop a learning & development plan for employees that every quarter every employee should participate digital training session for employees. The main objective of training agenda is to address the challenges laid out in the Digital Business Strategy. Leaders should participate with the employees in the training session which will build a better digital culture in Nova SBE.
- Leaders should set a performance appraisal goal for each employee that everyone should acquire a certificate or participate a training in digital technology. For example- Certification in Salesforce tool, ERP tool, SEO etc. and develop a policy that certification cost should be reimbursed by Nova SBE which will encourage employees to participate in building digital culture in Nova SBE.

Customer-

- Student engagement on social media is very less. As most of the revenues are coming from corporate client which we believe there is a strong demand for custom programs in Portugal. If you want to attract more students in open programs, student engagement is necessary in social media platform which will help to understand customer satisfier and dis-satisfier.
- Create the right culture for executive students in a way that exec education operation should look and feel like an actual business environment. The staff and faculty must passionate about serving clients and do whatever is necessary to delight them just like the staff at any customer-oriented business do the similar(Scheurer, 2015).

Step 3: Process and agile Innovation

- Few processes are not automated. Automate HR function, student recruitments and student email communication.
- Build digital culture to bring innovation in the workplace.

Step 4: Delivering Competitive Advantage through Technology and Analytics

Technology and Analytics- Nova SBE Executive Education unit is well equipped with all latest tools (e.g. Salesforce tool, ERP tool, Moodle) to run their day to operations. But the main problem is employees don't know the full potentials of each tool and technology. It may be the lack of knowledge or some other reason.

Below is the checklist to make a final plan of action and it is the technology and analytics which will deliver the digital business strategy. Here is the checklist template

<i>List of actions</i>	Tick Here	Comment
▪ <i>Did you take the innovations at one hand?</i>	<input type="checkbox"/>	
▪ <i>Did you review the diagnose challenges defined in the digital business strategy?</i>	<input type="checkbox"/>	
▪ <i>Do you have any guiding policy to overcome challenges?</i>	<input type="checkbox"/>	
▪ <i>Does your business resources align with strategy?</i>	<input type="checkbox"/>	
▪ <i>Dose your capabilities available for transformation?</i>	<input type="checkbox"/>	
▪ <i>Do you have the set of coordinate actions and resources to solve the problems?</i>	<input type="checkbox"/>	
▪ <i>Do you have a single integrated digital platform of integrate data and processes?</i>	<input type="checkbox"/>	
▪ <i>Do you use digital collaboration tools in your workplace?</i>	<input type="checkbox"/>	

<ul style="list-style-type: none"> Do you have adequate no of trained marketing and technical professional? <input type="checkbox"/> 	
<ul style="list-style-type: none"> Do you use analytic tool to make the decision? <input type="checkbox"/> 	

Step 5: Assess the impact of Digital Transformation

This is the last step of digital transformation process. Once Digital Transformation has implemented in Nova SBE, it is the duty of top leadership to check the effects of digital transformation by monitoring different 14 KPIs. These KPIs are defined in Digital Transformation Business Impact Scorecard [Table 1] to measure the effects of Nova SBE Executive Education Unit’s digital transformation efforts.

Recommendation

- Build a common system or single integrated digital platform of integrating data and processes.
- Currently Nova SBE Executive Education unit has the latest ERP, CRM tools, but it would be better if all these tools should be integrated and generate a common view of customers. With common view, it will help to develop better customer engagement and process optimization.
- As per Deloitte research paper states that digital collaboration tools improve productivity, transparency, communication quality and morale(Wakefield, Lee, & Guest, 2013). That’s why it is necessary to implement digital collaboration tools in the workplace.
- Top leadership participation is necessary to driver digital transformation which is missing in the current environment.

Reference

Abbany, Z. (2016). Konrad Zuse and the digital revolution he started with the Z3 computer 75 years ago | Science | DW | 11.05.2016. Retrieved May 18, 2017, from <http://www.dw.com/en/konrad-zuse-and-the-digital-revolution-he-started-with-the-z3-computer-75-years-ago/a-19249238>

Augustson, J., Davis, C., Fischer, A., Grossman, R., Gu, G., Naumes, L., ... Viskin, N. (2017). Digital Pulse: 2017 Outlook & Perspectives from the Market | Thought Leadership | Russell Reynolds Associates. Retrieved May 20, 2017, from <http://www.russellreynolds.com/insights/thought-leadership/digital-pulse-2017-outlook-perspectives-from-the-market>

Bellman, J., & Eggers, W. D. (n.d.). The journey to government’s digital transformation | Deloitte UK. Retrieved March 6, 2017, from <https://www2.deloitte.com/uk/en/pages/public-sector/articles/the-journey-to-governments-digital-transformation.html>

Bodin, B. (2016). Digital Disruption: Dealing With The Flip Side Of Digital Transformation. Retrieved

- May 19, 2017, from <https://www.forbes.com/sites/forbestechcouncil/2016/10/10/digital-disruption-dealing-with-the-flip-side-of-digital-transformation/#4b2f8bb84cc6>
- Boyde, E. (2013). Massive open online courses: Time and a little money are a worthy investment. Retrieved February 17, 2017, from <https://www.ft.com/content/c101d4cc-800f-11e2-96ba-00144feabdc0>
- CGI. (2016). Digital Strategy and Roadmap. Retrieved from https://www.cgi.com/sites/default/files/pdf/digital_strategy_and_roadmap.pdf
- Chan, W. K. (2016). Mooc Tracker - FT.com. Retrieved February 22, 2017, from http://www.ft.com/cms/s/2/039fb95a-161c-11e3-a57d-00144feabdc0.html?ft_site=falcon&desktop=true#axzz4ZQyQ7MvN
- Cisco. (n.d.-a). Digital Business Transformation by Cisco. *Http://www.cisco.com*. Retrieved from http://www.cisco.com/c/dam/global/en_au/home/digital_business_transformation_by_cisco_v13.pdf
- Cisco. (n.d.-b). Digitizing Higher Education. *Http://www.cisco.com*. Retrieved from <http://www.cisco.com/c/dam/assets/docs/digitizing-higher-education.pdf>
- Coleman Parkes Research. (2016). KEEPING SCORE: WHY DIGITAL TRANSFORMATION MATTERS. *Http://www.ca.com*. Retrieved from <http://www.ca.com/content/dam/rewrite/files/White-Papers/Keeping Score-Why Digital Transformation Matters-research-paper.pdf>
- D. Watkins, M. (2007). From SWOT to TOWS: Answering a Reader's Strategy Question. Retrieved May 22, 2017, from <https://hbr.org/2007/03/from-swot-to-tows-answering-a-readers-strategy-question>
- Edmead, M. (2016). Digital transformation: Why it's important to your organization | CIO. Retrieved February 22, 2017, from <http://www.cio.com/article/3063620/it-strategy/digital-transformation-why-its-important-to-your-organization.html>
- Education, E. (2017). The 2016 FT Executive Education rankings : analysis Established schools make significant strides while strong new entrants snap at their heels Executive education 2016 rankings (<http://ww, 4-7>).
- Elliot, T., Kay, M., & Laplante, M. (n.d.). Digital Transformation in Higher Education How Content Management Technologies and Practices Are Evolving in the Era of Experience Management. Retrieved from https://omniupdate.com/_resources/pdfs/research/digital-clarity-group-report-march2016.pdf
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). Embracing Digital Technology: A New Strategic Imperative. *MIT Sloan Management Review*, 1–12. Retrieved from http://sloanreview.mit.edu/projects/embracing-digital-technology?switch_view=PDF
- From the print edition | Briefing. (2014). The future of universities: The digital degree | The Economist. Retrieved February 17, 2017, from <http://www.economist.com/news/briefing/21605899-staid-higher-education-business-about-experience-welcome-earthquake-digital>
- Grossman, R. (2016). The Industries That Are Being Disrupted the Most by Digital. Retrieved May 20, 2017, from <https://hbr.org/2016/03/the-industries-that-are-being-disrupted-the-most-by-digital>

- Harvard Business Review. (n.d.). ACCELERATING THE PACE AND IMPACT OF DIGITAL TRANSFORMATION EXECUTIVE SUMMARY in association with Can Digital Generate Significant Impact for More Than 21% of Enterprises? Retrieved from www.genpact.com
- Hodson, D. N. (2016). Digital Transformation: The Age of Innocence, Inertia or Innovation? *Microsoft*. Retrieved from https://www.hso.com/fileadmin/user_upload/Digital_Transformation_Project_Report.PDF
- HORN, MICHAEL AND CHRISTENSEN, C. (2013). Beyond the Buzz, Where Are MOOCs Really Going? | WIRED. Retrieved February 17, 2017, from <https://www.wired.com/2013/02/beyond-the-mooc-buzz-where-are-they-going-really/>
- International, K. (n.d.). Digital disruption – dive in to thrive. Retrieved from <https://assets.kpmg.com/content/dam/kpmg/pdf/2014/11/digital-disruption-drive-to-thrive.pdf>
- ionology. (n.d.). Digital Transformation Framework - Ionology. Retrieved May 13, 2017, from <https://www.ionology.com/digital-transformation-framework/>
- ISAACSON, W. (2014). The Digital Revolution's Most Pivotal Moments | Vanity Fair. Retrieved May 18, 2017, from <http://www.vanityfair.com/news/business/2014/10/digital-revolution-important-moments>
- Jones, A. (2016). Should business schools fear McKinsey's leadership factory? Retrieved February 17, 2017, from <https://www.ft.com/content/0d17f670-1612-11e6-b197-a4af20d5575e>
- Jurevicius, O. (2013). PEST & PESTEL Analysis | SMI. Retrieved May 20, 2017, from <https://www.strategicmanagementinsight.com/tools/pest-pestel-analysis.html>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy , not Technology , Drives Digital Transformation Becoming a digitally mature enterprise. *Sloan Management Review*, (57181), 27. <https://doi.org/http://www2.deloitte.com/content/dam/Deloitte/cn/Documents/technology-media-telecommunications/deloitte-cn-tmt-strategy-not-technology-drive-digital-transformation-en-150930.pdf>
- Libert, B., Beck, M., & Wind, Y. (Jerry). (2016). 7 Questions to Ask Before Your Next Digital Transformation. Retrieved February 19, 2017, from <https://hbr.org/2016/07/7-questions-to-ask-before-your-next-digital-transformation>
- Mccuaig, D. (2016). CGI Global 1000. Retrieved from https://www.cgi.com/sites/default/files/cgi-global-1000_doug-mccuaig.pdf
- McDonald, M. (2015). What Is A Digital Strategy? - Accenture. Retrieved May 18, 2017, from <https://www.accenture.com/us-en/blogs/blogs-digital-what-is-digital-strategy>
- Mckeown, N. (n.d.). A STEP BY STEP GUIDE TO DIGITAL TRANSFORMATION An Essential Guide to Creating High Margin Competitive Advantage in a Digital World, 1. Retrieved from <https://www.ionology.com/wp-content/uploads/2017/01/Step-by-Step-Guide-New.pdf>
- Microsoft Asia News Center. (2017). 80% of business leaders believe they need to be a digital business to succeed: Microsoft study - Asia News Center. Retrieved May 19, 2017, from <https://news.microsoft.com/apac/2017/02/20/80-of-business-leaders-believe-they-need-to-be-a-digital-business-to-succeed-microsoft-study/#sm.00000hk7gv1wiyfQ0zr7lqsqh0xaj%23iDJWIIX4OWhpSXBL.97>

- Networks Asia staff. (2017). APAC businesses recognize importance of digital transformation in journey to success | Networks Asia | Asia's Source for Enterprise Network Knowledge. Retrieved May 18, 2017, from <https://www.networksasia.net/article/apac-businesses-recognize-importance-digital-transformation-journey-success.1487905440>
- Oracle Corporation, for. (2016). Digital transformation: The challenges and opportunities facing banks - White paper | Oracle, (February). <https://doi.org/10.1007/978-3-319-23279-9>
- Ovide, S. (2016). Google and Facebook Killed Free Media - Bloomberg Gadfly. Retrieved May 19, 2017, from <https://www.bloomberg.com/gadfly/articles/2016-08-09/google-and-facebook-killed-free-media-with-ad-domination>
- Rogers, B., Maguire, E., Nishi, A., Moreno, K. W., S. Moreno, H., Stahley Crean, K., ... Chin, S. (2016). HOW TO WIN AT DIGITAL TRANSFORMATION. *Forbes Insights*. Retrieved from https://images.forbes.com/forbesinsights/hds_digital_maturity/HowToWinAtDigitalTransformation.pdf
- Scheurer, W. (2015). BizEd Magazine | November/December 2015 | The Exec Ed Action Plan. Retrieved May 15, 2017, from <http://www.bizedmagazine.com/archives/2015/6/features/exec-ed-action-plan>
- Schwab, K. (2016). The Fourth Industrial Revolution: what it means and how to respond | World Economic Forum. Retrieved May 18, 2017, from <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>
- Solis, B. (n.d.). THE SIX STAGES OF DIGITAL TRANSFORMATION MATURITY. Retrieved from <https://www.cognizant.com/whitepapers/the-six-stages-of-digital-transformation-maturity.pdf>
- Solis, B., & Szymanski, J. (n.d.). The 2016 State of DIGITAL TRANSFORMATION. Retrieved from <https://www.vmware.com/ciovantage/wp-content/uploads/2017/03/The-2016-State-of-Digital-Transformation-Altimeter.pdf>
- Storey, J. (2017). The Only Digital Transformation Framework You Will Need | Expert360's Resources Hub. Retrieved May 12, 2017, from <https://expert360.com/blog/perfect-digital-transformation-framework/>
- The Path to Digital Transformation. (n.d.). Retrieved from <https://hpe-enterpriseforward.com/wp-content/uploads/2016/07/hpe-ebook-digTransformation-218530-jun21-final.pdf>
- University of the future. (n.d.). Retrieved from http://www.ey.com/Publication/vwLUAssets/University_of_the_future/%24FILE/University_of_the_future_2012.pdf
- Wakefield, S., Lee, P., & Guest, M. (2013). Digital collaboration Delivering innovation, productivity and happiness. *Deloitte*. Retrieved from <https://www2.deloitte.com/content/dam/Deloitte/se/Documents/technology-media-telecommunications/deloitte-digital-collaboration.pdf>
- Weihrich, H. (n.d.). Daimler-Benz's Move towards the Next Century WITH THE TOWS MATRIX. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.507.4231&rep=rep1&type=pdf>