

Idea Report

Digital Transformation

Lockheed Martin
Leadership Institute



MIAMI UNIVERSITY
COLLEGE OF ENGINEERING AND COMPUTING

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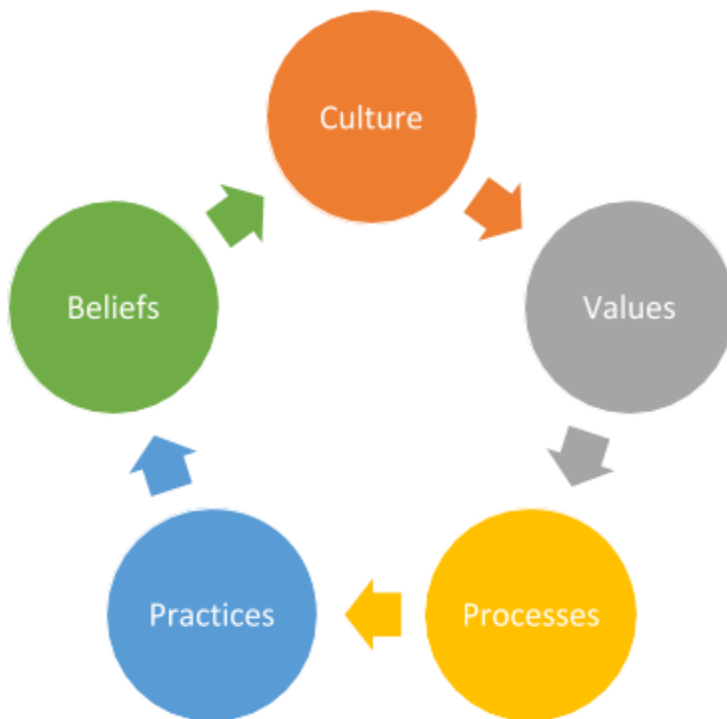
Executive summary

Digital transformation takes many forms. It is the automation of manual or tedious tasks, the use of the cloud for data storage, open source business models that spread across multiple continents, and even instrumentation of new models for change within a business organization. The purpose of this Idea report is to focus on the individual and inform our generation about how they, as professionals, can navigate the world brought about by digital transformation. This involves inward changes in thinking or goals, such as growing in your ability and skill set to process changes, working on soft skills, and embracing challenges.

Introduction

Simply put, Digital Transformation is the implementation of technology in our society or culture and the changes this integration brings about. It involves greater connectivity with others as a result of improved technology and more use of artificial intelligence. It significantly impacts the way businesses are run, and it will continue to be more visible and influential in the years to come.

In most studies and journals, the topic of digital transformation is focused on large-scale changes related to entire corporate layouts, global sustainability, etc. While there certainly is a large impact within these areas, Digital Transformation is not limited to the corporation. It also greatly impact the individual and how one needs to be to be successful in the digital era.



Digital Transformation is the acceptance that change is the norm and the operating systems of organizations must adapt to keep up with the constantly changing digital environment.

These changes are not simply woven in with the standard processes of the businesses. Digital sustainably starts at the core of the firm with the beliefs, culture, values, practices, and processes of the firm.

It is critical to understand how each aspect interact with each other to build a better digital business.

It's predicted that 41 percent of enterprise revenue will come from digital business by 2020 – that's almost double what it was in 2015

In this era of Digital Transformation,
leaders must re-imagine their business
to be sustainable

Culture

Society as a whole has always been reactionary. It does not anticipate changes or problems, instead of dealing with them after shifts have already occurred. This reactionary state that is so ingrained in our culture is not sustainable in the digital era. Due to the rate at which technology and other changes are impacting the world, society will never catch up to these changes if it is not proactive towards the changes brought out about by Digital Transformation.

Similarly, the individual can no longer be reactionary within the digital world. Instead of being blindsided by change or even being open to it, you must anticipate change. This means increasing knowledge on the current state of technologies, businesses, and markets, as well as soft skills like public speaking and emotional intelligence. The successful individual will be well informed not only about his or her area of expertise, but also their company and the world around them. Having this knowledge base increases your maneuverability and differentiates you from others who do not have the drive or passion to be successful.

However, developing an action-oriented mindset instead of a reactionary mindset is easier said than done. Being aware and ready for changes sounds promising, but can easily lead to fear or a fixation on impending change. This runs contradictory to the needed mindset for the individual because he or she must be working at their best in the present and open to learning, which can not happen if one is in constant fear of a future to come. There is also a danger of this idea of self-improvement being warped into a

negative motivator or a competition. Anticipating change is not about being good at what you do or at being prepared. It is not showcasing your growing knowledge set or trying to outperform your peers. It is about preparing out of a desire for self-growth, being a better you than you were the day before through growing in your technical skill set, growing in your knowledge of the business, or growing in your ability to relate to and support your peers.

To combat this negative interpretation of the needed mindset, there is an exercise a person can do to help them get in the correct mindset to take on challenges and changes externally and internally. First, you must write down names of everyone who you view as an obstacle or enemy in a column on a piece of paper. These can be people you resent, have bad memories of, etc. The next column contains, for each person you wrote, the reason why they are on the list. The final column contains the most valuable information, the fear that this person and their actions are triggering. Once you have done this for every person on your list, you will most likely find that the same 3-5 fears make up most of this final column. These are your fears. These are things that keep you fixed in your ways, opinions, and feelings and prevent you from experiencing healthy change. You must then look at how you contribute to this fear and how this shapes your life. By looking at your fears in this context, the problem transcends your peers and is instead placed on you. You have a hand in your own failings and must work to improve them. This exercise also forces you to be open about your fears which is necessary when accepting any form of change. It is not a panacea, but a step on the path to forming a growth mindset and being open to change.

To be successful in this age one must also understand the nature of change. Aaron Dignan, a prominent expert in the field of Digital Transformation, has been working to dispel the notion that change is a linear process. For years people have been trying to model change as this linear process of action and painful challenge. However, all these models tend to fail because they focus too much on the organization or the external and not on the individual and human element of changes. To combat this, Mr. Dignan proposed a cyclical model. In this model teams spend more time reflecting on how they work instead of pushing through work. Companies find open space for sharing ideas, feelings, and opinions. Bosses check in on their employees work and personal states. And, organizations succeed by implementing small changes, building internal confidence and moral. The model begins with new insights, new ideas, off the wall ideas, etc. Then it flows into options. How are we going to pursue this new insight? What are easy and small steps to reaching our goal? Then we test and learn. We understand what this small change is doing within our organization and constantly monitor if it is helping us reach our new goal. And finally using these new insights from our testing and learning we start all over again.

While Mr. Dignan's focus for this model was at the organizational level there are two reasons it is beneficial to learn as an individual. One of these reasons is that as an individual in the workforce or heading towards the workforce, you will be experiencing this model in your daily work life. Similar to learning Agile before you walk into a software company, understanding this new cycle of change will help you assimilate easily into your new work environment. The second reason for understanding this model

is that it reflects the internal cycle of change the individual can take to deal with change in a healthy manner. By processing our individual change in this way, the stress of a step by step process which does not apply to all situations and the overwhelming pain of having no process, in general, will be alleviated.

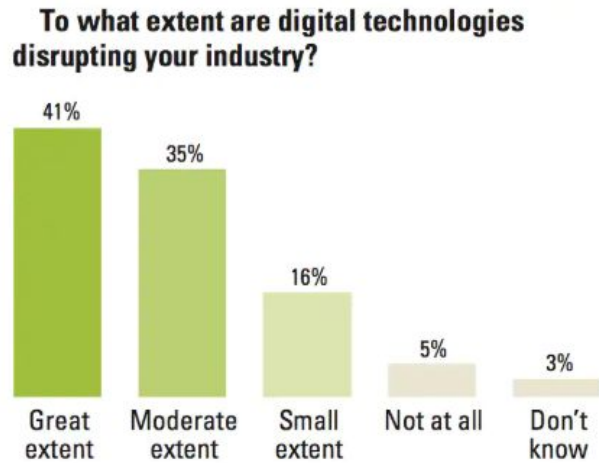
Why is it important for students?

Being prepared for digital transformation is important for students because there is a level of uncertainty involved in the coming digital era. The way people interact is constantly changing.

The overall goal of going to school is to prepare students to work in the “real world.” For our entire lives we have been told that the things we were learning in classes are going to directly prepare us for when we enter the workforce, but why haven’t we been learning about digital transformation? Digital transformation is going to affect us every day in our jobs, no matter the industry, and we need to be preparing ourselves to be able to deal with the changing industries. There are three major areas why students are going to need learn about Digital Transformation.

First, students are going to be the future of these companies and it is essential for them to be ready for the cultures that are found in them. Digital transformation is transforming the very foundations of how businesses are run and the entire corporate landscape will be changed. Students will be thrown into these ever-changing environments and they will need to have the resiliency to be able to keep up. According

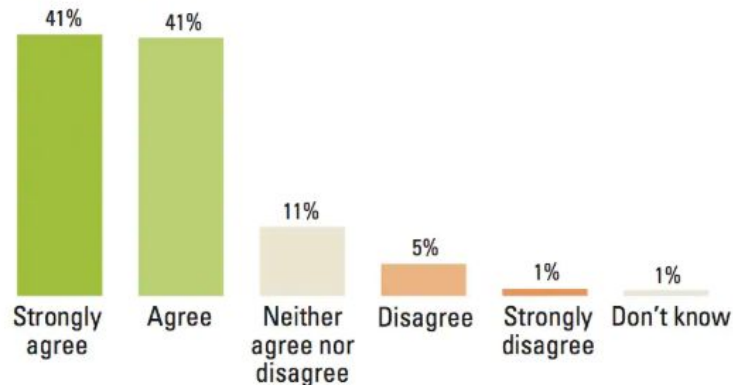
to MIT Sloan Management and Deloitte University Press, almost every company is reporting that digital technologies are going to disrupt their processes.



Graphic: MIT Sloan Management Review/Deloitte University Press | DUPress.com

Students also needed to be versed in Digital Transformation set themselves apart from their peers. Employers will look for what students can do in terms of making their company better and help them achieve their overall company goals. Students need to know what companies will need to stay ahead of the competition and stay on top of the newest technologies.

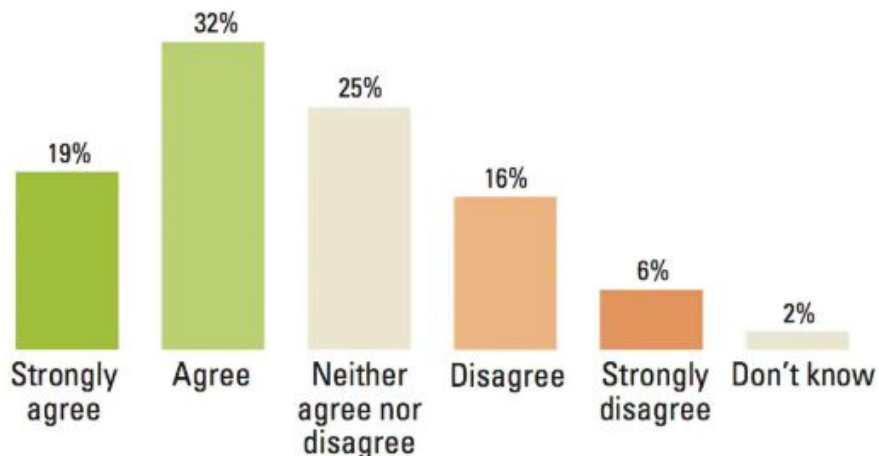
My organization views digital technologies as an opportunity.



Graphic: MIT Sloan Management Review/Deloitte University Press | DUPress.com

When staying on top of the newest technology, people that don't understand it will come to us for help. Older generations are looking to us for help with new technologies and new ideas, and superiors will look at us, the students, to know how to work with these ever-changing technologies. Students are the future and the future is digital transformation, so why aren't they learning it in schools?

My manager encourages me to innovate with digital technologies.



Graphic: MIT Sloan Management Review/Deloitte University Press | DUPress.com

What do we as students need to be doing?

Students need to understand the concept of digital transformation and what that currently looks like right now. Students should look to the future and do research on how digital transformation will impact their particular career focus. Another thing students can do is develop transformational qualities. Sustainability is an important quality, along with discipline, focus, agility, and connectivity. Students who want to be ready for the digital era should also learn how to spark change in others and empower others.

One of the key features of an individual is his or her ability to not only anticipate change but overcome obstacles and past failures. So the simple answer is that to be prepared for the digital era, a person has to be resilient, however, resiliency is neither something that comes naturally nor a skill that can be lectured to someone. It is learned through experiences, our crucibles and our valleys. This may sound like it is being suggested that a person need submit to or experience a painful experience to be ready for digital transformation, but this is false. Digital Transformation is not torture. So, how can someone then achieve this mindset as an undergraduate? While education may not cater to this mindset, there are a variety of ways to grow in your ability to overcome challenges through university.

The first step is to become very involved in something, it could be a club, a business, or an organization you are passionate about or interested in. Devote your

time to the organization and take on projects, events, or leadership roles. You will fail often and you will let people down, but you will also grow in your ability to take charge of situations, think on your feet, and deal with conflict. From your experiences, you will learn how to deal with the highs and lows brought about by changes within your organization and the success and failure of your own actions. Another step that undergraduates can take is to work on projects within design competitions. Senior students at most engineering schools get to experience a senior capstone or design project but this is far too late in an undergraduate career to have your first experience with the stresses and failures of a year-long project. This lies partially on schools, but students should go out and seek opportunities like design competitions, hackathons, and case studies. Hard deadlines with real stakes from clients, investors, and superiors simulate a working environment. Also, these projects are not guaranteed to succeed and when they don't there are usually processes in place to help students learn from failures such as group discussions and project reports.

DIGITAL TRANSFORMATION

The Fourth Industrial Revolution

DIGITAL SUSTAINABILITY

The ability to thrive in a continuously changing digital world. This requires more than just keeping up with the latest technology. To succeed, firms need to weave the ability to continually transform into their culture, ethics, value, beliefs, processes.



DIGITAL ERA AND LEADERSHIP



To Lead with digitization one must understand the impact digital transformation can have on the businesses. One needs to generate new insights which can leverage for differentiated capabilities.

HYPER-COLLABORATION

Working relentlessly to break down isolated groups. Getting people to work together by putting multi-disciplinary groups together across the company.



IDENTIFYING TECHNOLOGY & TRENDS



Improvements in the ability to capture, process, store, analyze, visualize, and share data. The analytics industry Capture, store, and process large volumes of data from new sources and combine it with other data to give fresh insights

"IT'S PREDICTED THAT 41 PERCENT OF ENTERPRISE REVENUE WILL COME FROM DIGITAL BUSINESS BY 2020 - THAT'S ALMOST DOUBLE WHAT IT WAS IN 2015"-KORN FERRY INSTITUTE: REBUILT TO LAST: THE JOURNEY TO DIGITAL SUSTAINABILITY

Understand what digital transformation is

The first step in preparing for this new era is understanding what digital transformation. Establishing a base understanding is crucial to ensuring that the next actions you take when preparing are inline with what the era actually is.

Understand how it will impact you

Digital transformation will have a wide impact on everybody, so recognizing how it will impact you in the present and future is essential. This is a good practice of self-awareness.

Develop transformational qualities

To be prepared for the era of digital transformation it is important to adopt qualities necessary for sustainably. These qualities include: Discipline and focus, agility, and connectivity

Changing other's mindset, not just yours

Sparking change in other is just as important as yourself. Digital transformation emphasizes the connectivity of all people, so if everyone does not possess the same mindset positive change is halted.

Empower Others

Trusting and empowering others is an important aspect of leadership. One of the centers of an operating system should be that the mission comes from the top, and everything else comes from a team. This eliminates the perpetual disengagement and motivates employees to buy into the organization's mission and use their talents accordingly.

Embrace Change

Change should not be viewed as death then being reborn, it should be viewed as growth. The most important aspect of digital transformation is not being afraid of making mistakes, and most importantly learning from these mistakes.

DIGITAL TRANSFORMATION

(n) Strategically using technology to improve a company.

CHARACTERIZED BY

Rapid Technological Changes

Technology is changing faster than ever before.

Shift from Physical Attributes to Knowledge

Concrete knowledge is most important

Dynamic Spread of Information

Information is accessible to anyone from anywhere in the world.

More Dispersed Company Structure

Companies must assure that everyone "buys in"

By Jake Strickler

How is the Lockheed Martin Leadership Institute Affected by this Research?

The Lockheed Martin Leadership Institute itself can help prepare its own students for digital transformation as well. There are many ways in which this could happen. For instance, students in the Lockheed Martin Leadership Institute could work closer with companies. By doing this, the students would gain insight on how the company they work with is handling digital transformation. In addition, there would probably be a need to communicate with these companies in order to do work. That would involve the use of new, developing technology and would give the students practice communicating in a manner that reflects the restructuring of companies found in the digital era. This would be a hands-on experience of digital transformation. There could be a focus on professionals who have recently entered the workforce. Another way in which the Lockheed Martin Leadership Institute can move forward in the digital era is a collaboration across cohorts. This is something that is currently happening with this project and should continue in the future. In addition to that, digital leadership needs to be a topic that is addressed at some point. Another thing the Lockheed Martin Leadership Institute can continue to do is focus on mindsets.

Conclusion

Digital transformation is happening and will affect many things, but we must focus on how it affects the individual, in this case, the student. Digital transformation describes the changes associated with technological development and the impact that has on the workplace and our everyday lives. Unfortunately, many people will react negatively to this, so changing one's mindset is the first step. The digital era will bring about differences in how the business hierarchy will shift. A gap between educated and uneducated will also appear, so we must be prepared for that. There is an uncertainty in all this, and students have to be ready. This will impact everybody, but it will be up to the current and future professionals to make sure digital transformation is carried out in an ethical manner, so students should be ready for that. This responsibility also falls on the universities and institutions. The Lockheed Martin Leadership Institute is a good place to start. There, the students can learn how to collaborate with others and communicate in a way that prepares them for digital transformation. As an institution, it could go one step further and possibly collaborate with other companies. This may make the transition from school to profession smoother, and will certainly help create digital leaders.

References

Dobbs, Richard, et al. *No Ordinary Disruption: the Four Global Forces Breaking All the Trends*. PublicAffairs, 2016.

Hemerling, Jim. "5 Ways to Lead in an Era of Constant Change." *TED*, www.ted.com/talks/jim_hemerling_5_ways_to_lead_in_an_era_of_constant_change.

Venkatraman, Venkat. *The Digital Matrix New Rules for Business Transformation Through Technology*. Lifetree, 2017.

Li, Charlene. "Efficient Leadership in the Digital Era." *TED*, Sept. 2014, www.ted.com/talks/charlene_li_efficient_leadership_in_the_digital_era.

"18 Reasons the U.S. Education System Is Failing." *The Edvocate*, 3 Apr. 2017, www.theedadvocate.org/10-reasons-the-u-s-education-system-is-failing/.

Events, USI, director. Ready for Change- Aaron Dignan, at USI. YouTube, YouTube, 27 June 2017, www.youtube.com/watch?v=mFJfGzakM_g.

Frank, Malcolm, et al. *What to Do When Machines Do Everything: How to Get Ahead in a World of AI, Algorithms, Bots, and Big Data*. John Wiley & Sons, Inc., 2017.

NeuroLeadership Institute. *Idea Report Growth Mindset*. 2018.

Schwab, K. (2017). *The Fourth Industrial Revolution*. London: Portfolio Penguin.