

Management of Innovation

Topic 5 Digital Transformation

Prof. Corrado Cerruti

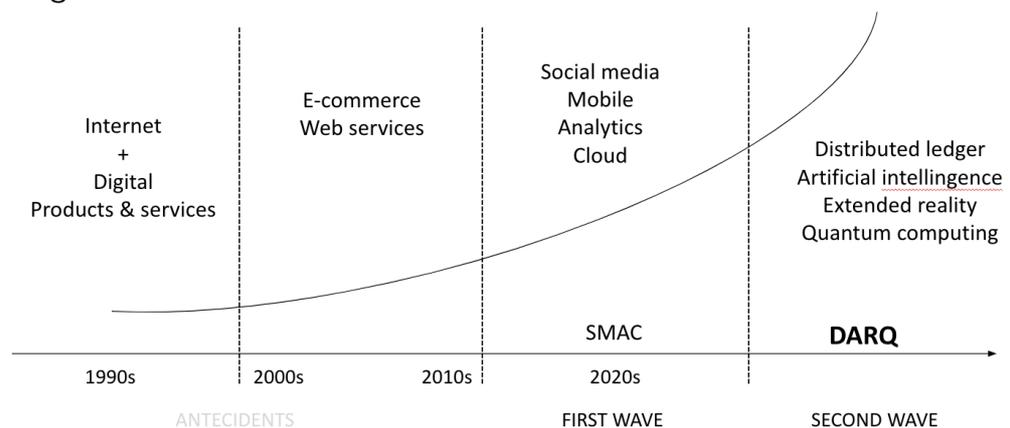
Slides are taken/adapted from different sources In particular in the second part:
D.R. Rogers, *Digital Transformation Playbook*
Columbia Business School Publishing, 2016

Digital Transformation

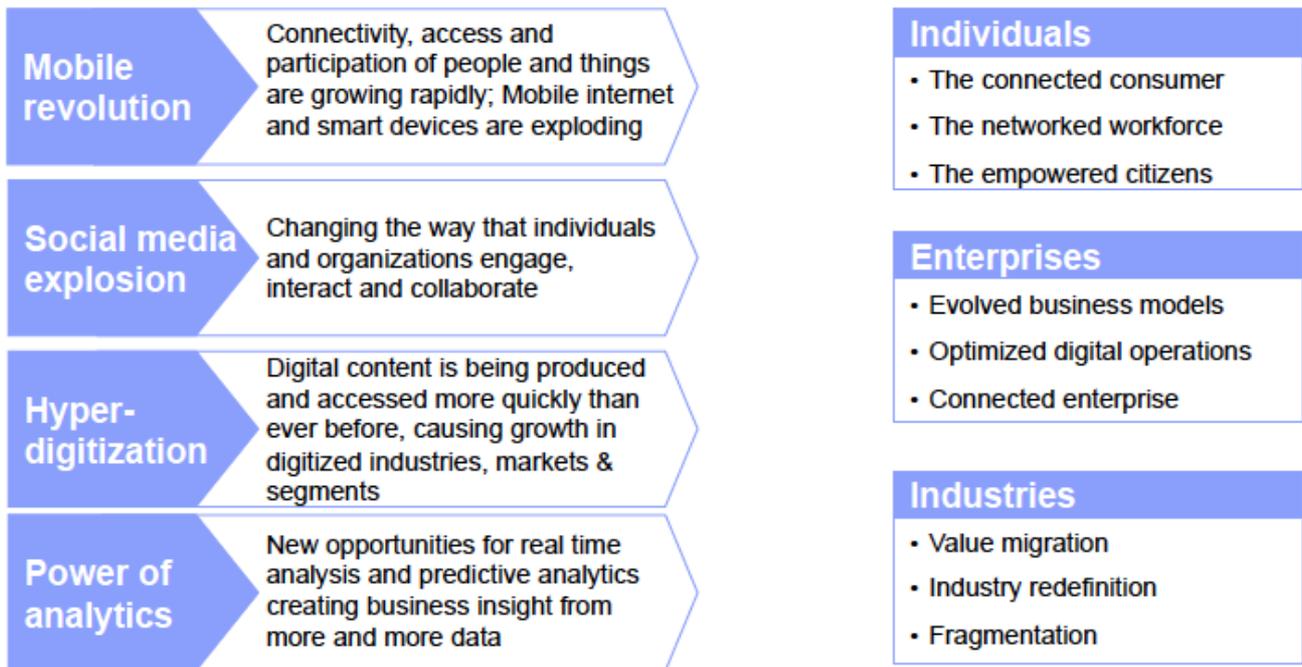
Digital transformation can be defined as the integration of digital technologies into all business areas, fundamentally changing how companies operate (Enterprisers project, 2020). Digital transformation is not primarily about technology and its implementation, but it is mainly about the business impact technology can have.

Digital technologies allows

- Exact replications
- Infinite times
- At zero marginal cost



Digital transformation impacts

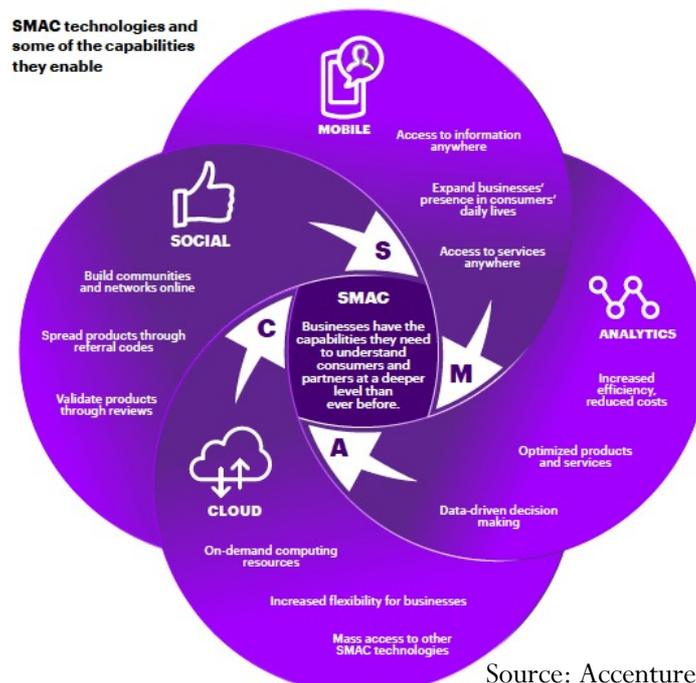


Source: IBM

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Main technologies driving DT

- «SMAC» technologies have driven the first wave of DT

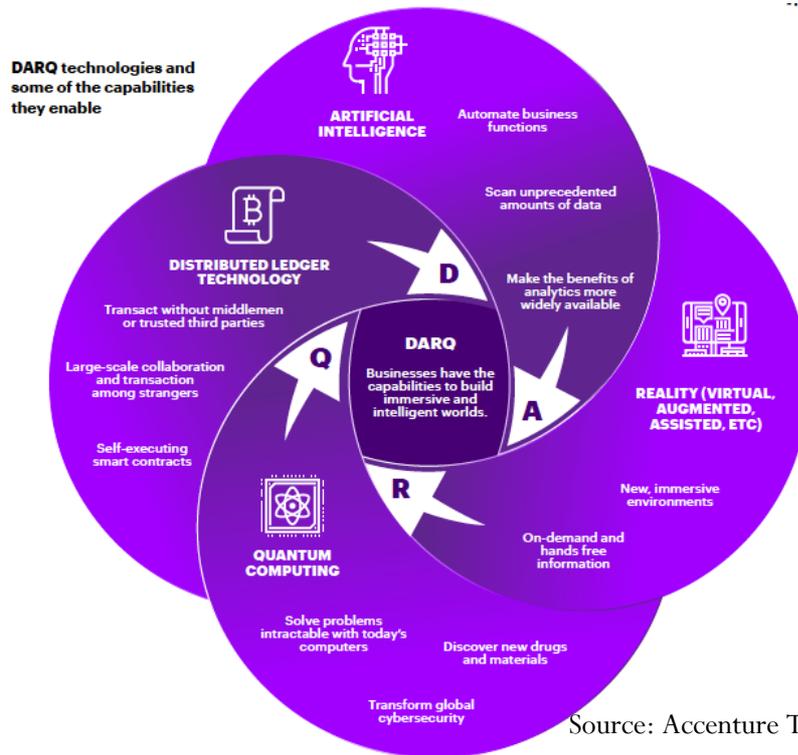


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Source: Accenture Technology Vision, 2019

Main technologies driving DT

- «DARQ» technologies are driving the second wave of DT

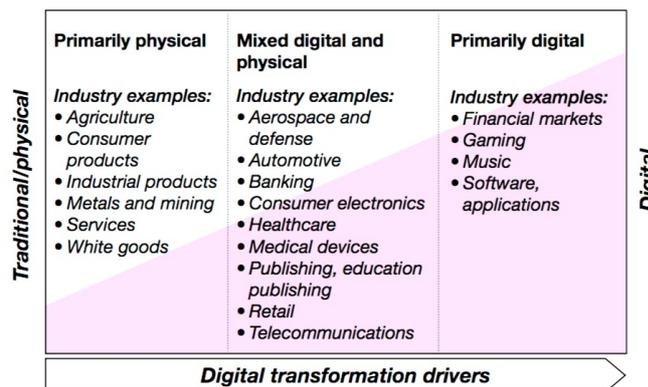


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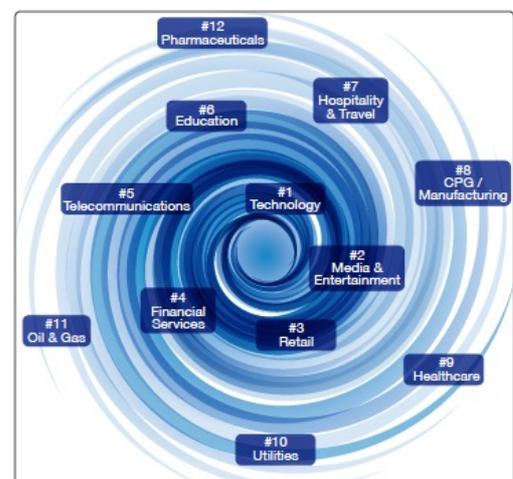
Source: Accenture Technology Vision, 2019

Digitalization trends

Degree of product and service digitization



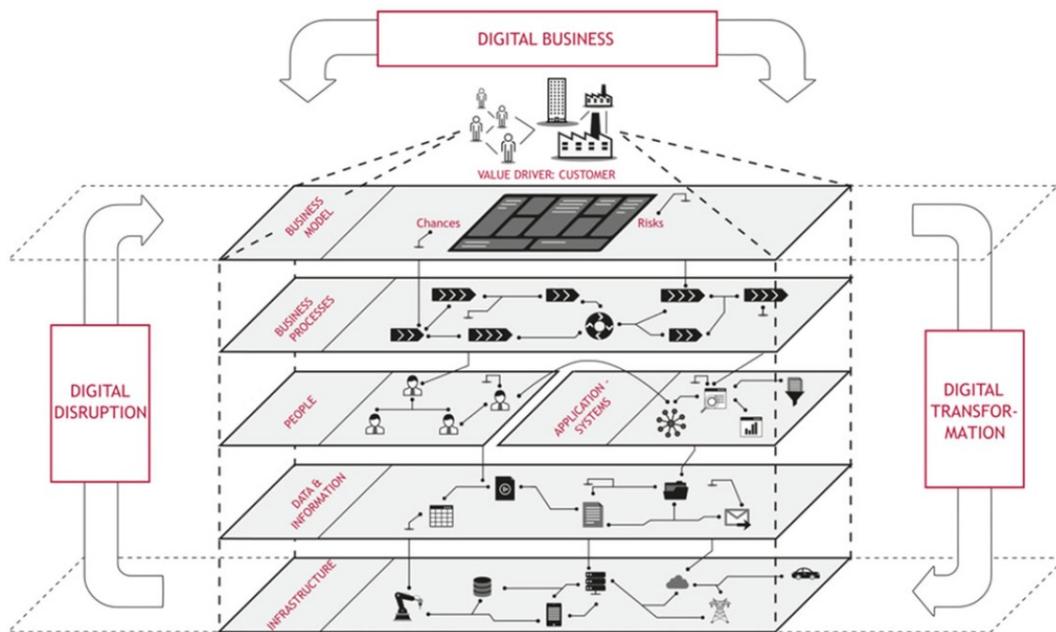
Source: IBM Institute for Business Value analysis.



Source: IMD/Cisco, Digital Vortex. How digital disruption is redefining industries, 2015

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Overall impact of digital transformation



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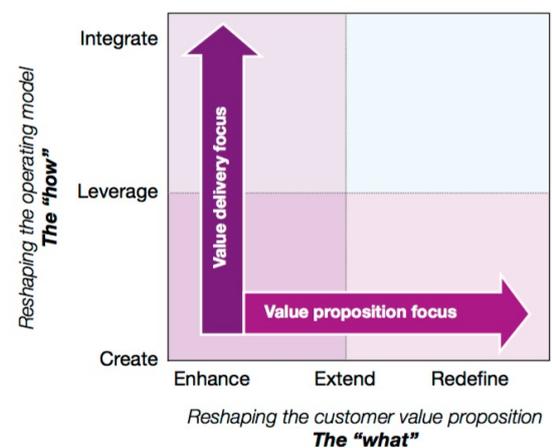
Urbach N. and Röglinger M. Editors (2019), Digitalization Cases: How Organizations Rethink Their Business for the Digital Age, Springer.

Dimensions of digital transformation: How and What

What do businesses need to do to get ahead of the widespread forces for change in our digital age?

- a. Reconfiguring the customer value proposition (**what** is being offered)
- b. Reshaping the operating model (**how** it is delivered).

Elements of digital transformation



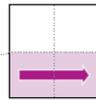
Source: IBM Institute for Business Value analysis.

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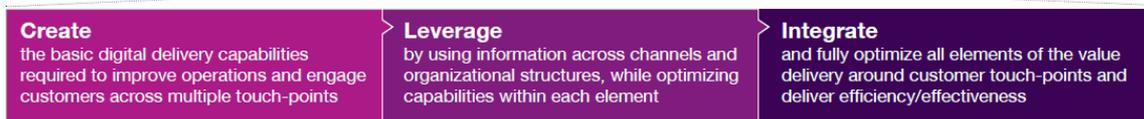
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Dimensions of digital transformation

Reshaping the customer value proposition



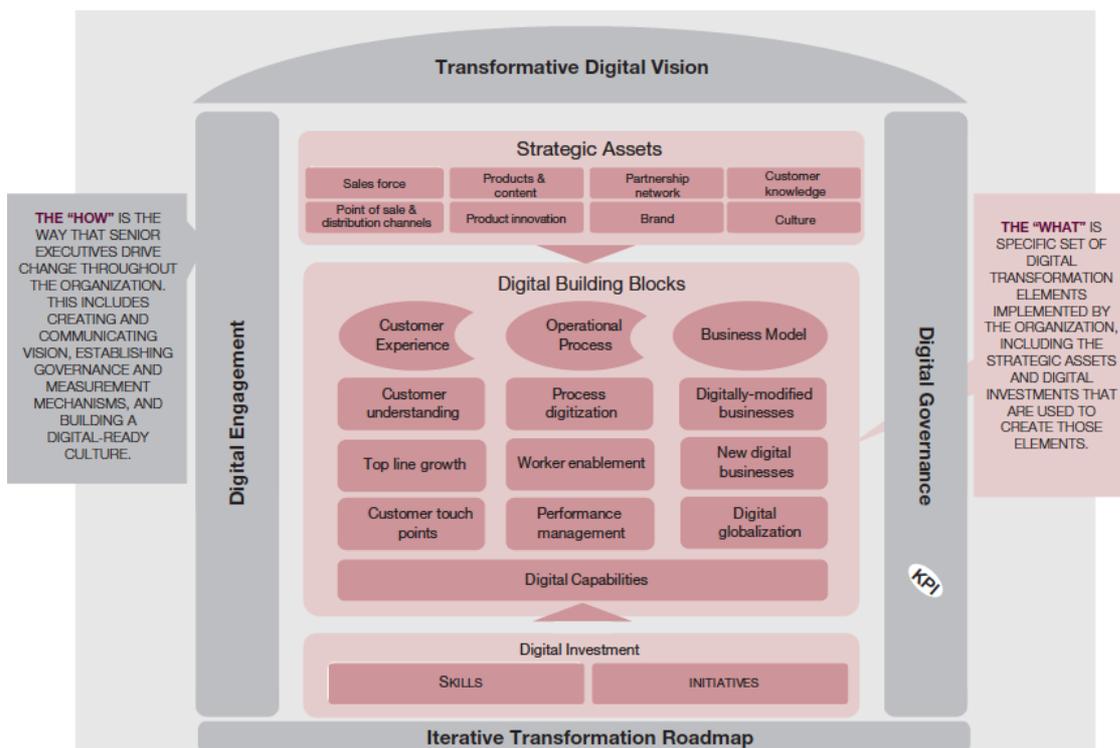
Reshaping the operating model



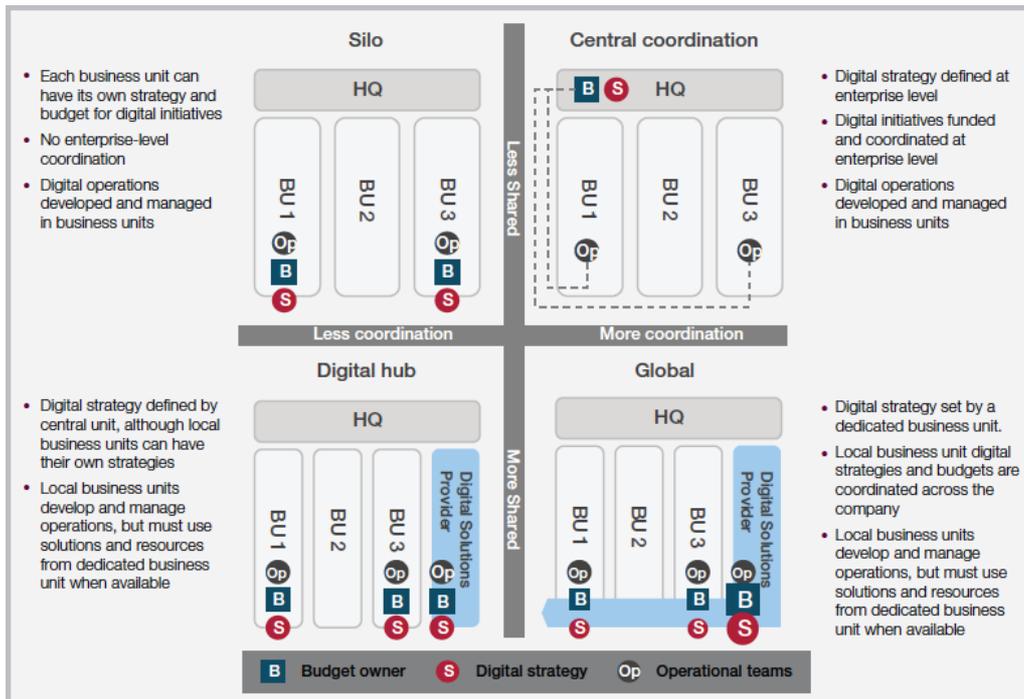
Source: IBM Institute for Business Value analysis.
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Dimensions of digital transformation: How and What

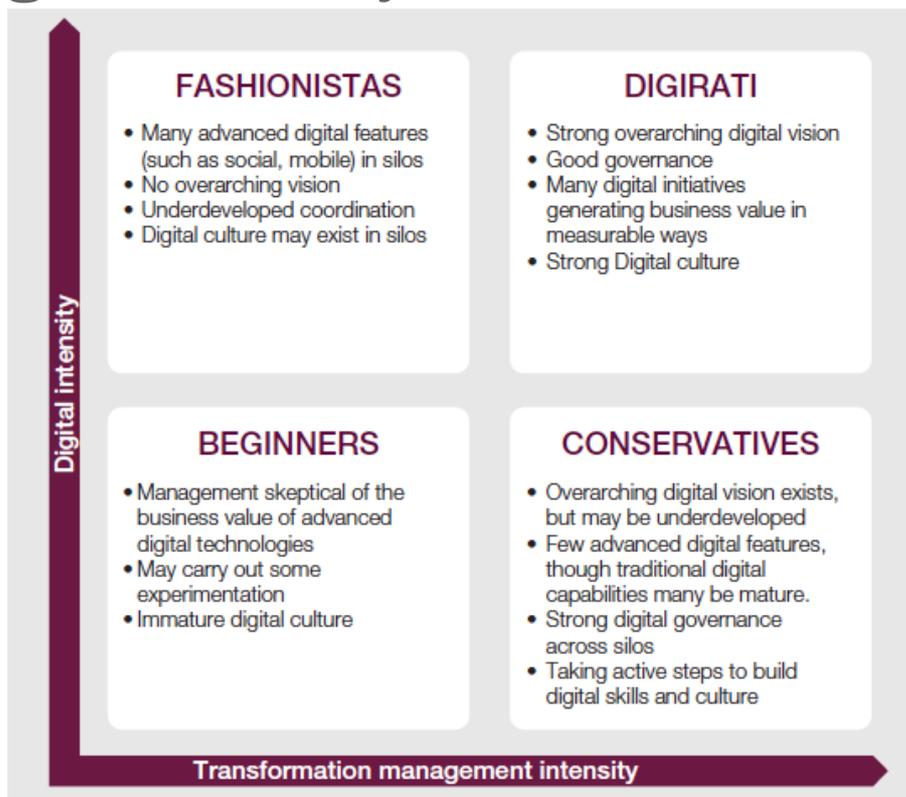


Coordination models for digital transformation



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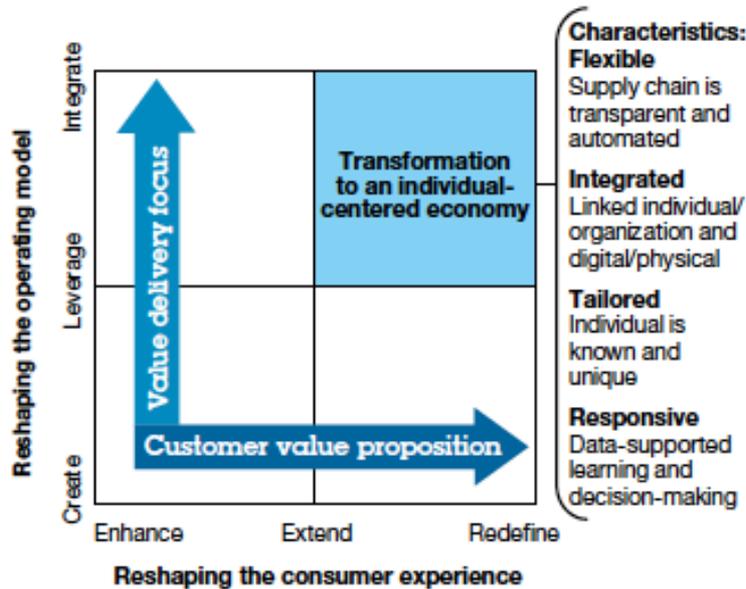
Digital maturity ... towards digital literacy



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The essence of digital transformation

Digital transformation framework



Source: IBM Institute for Business Value analysis; "Digital transformation: Creating new business models where digital meets physical." IBM Institute for Business Value.

The value chain/industry changes

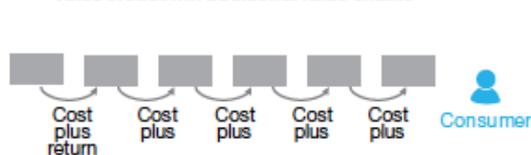
Value chains will fragment

New technologies will make value chains more transparent and easier to decompose (see Figure 4). In the past, value chain disruptions often involved replacing whole value chains or big chunks of value chains, such as replacing traditional banking processes with Internet-based, virtual banking. Next generation value chain disruption will involve contesting more specific elements or functions within value chains.

Industries will converge

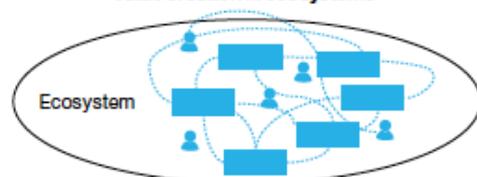
As specific functions in value chains are contested, new competitors will emerge. Functional specialists from one industry will begin competing in specific value chain functions of other industries. This cannibalization across industries will begin to drive industry convergence (see Figure 5).

Value creation in traditional value chains



Total value = total costs + total returns

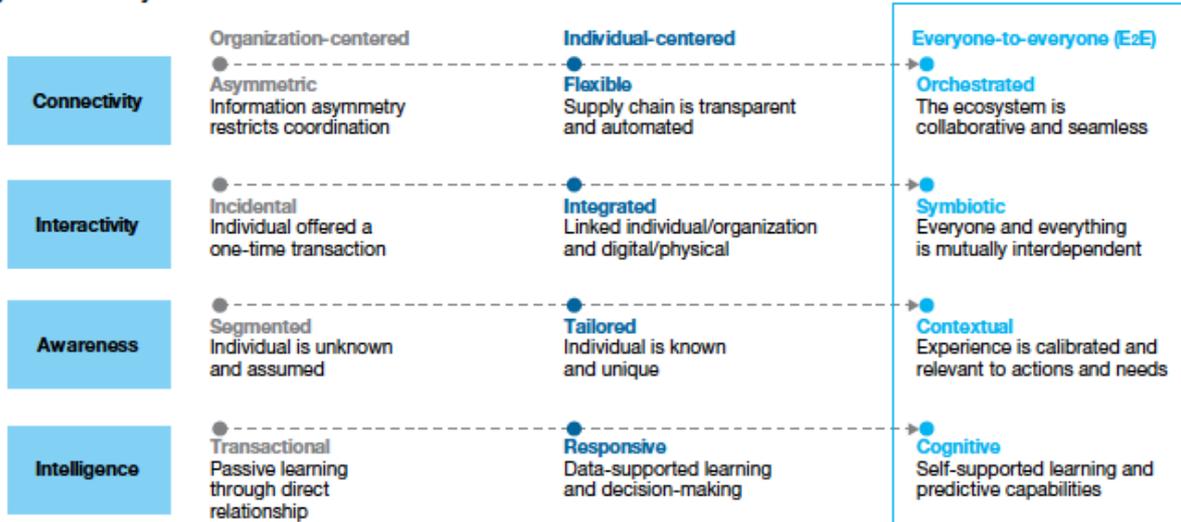
Value creation in ecosystems



Total value = willingness to pay to participate in the ecosystem

Digital transformation trends

Digitization maturity model



Source: IBM Institute for Business Value analysis.

Five Domains of Strategy that Digital is Changing

Across these five domains, digital technologies are redefining many of the underlying principles of strategy and changing the rules by which companies must operate in order to succeed.





CUSTOMERS



COMPETITION



DATA



INNOVATION



VALUE

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	From	To
Customers (chapter 2)	Customers as mass market Communications are broadcast to customers Firm is the key influencer Marketing to persuade purchase One-way value flows Economies of (firm) scale	Customers as dynamic network Communications are two-way Customers are the key influencer Marketing to inspire purchase, loyalty, advocacy Reciprocal value flows Economies of (customer) value
Competition (chapter 3)	Competition within defined industries Clear distinctions between partners and rivals Competition is a zero-sum game Key assets are held inside the firm Build product with unique features and benefits A few dominant competitors per category	Competition across fluid industries Blurred distinctions between partners and rivals Competitors cooperate in key areas Key assets reside in outside networks Build platforms with partners who exchange value Winner-takes-all due to network effects
Data (chapter 4)	Data is expensive to generate in firm Challenge of data is storing and managing it Firms only make use of structured data Data is managed in operational silos Data is a tool for optimizing processes	Data is continuously generated everywhere Challenge is turning data into valuable information Unstructured data is increasingly usable and valuable Value of data is in connecting it across silos Data is a key intangible asset for value creation
Innovation (chapter 5)	Decisions made based on intuition and seniority Testing ideas is expensive, slow, and difficult Experiments conducted infrequently, by experts Challenge of innovation is to find the right solution Failure is avoided at all cost Focus is on the "finished" product	Decisions made by testing and validating Testing ideas is cheap, fast, and easy Experiments conducted constantly, by everyone Challenge of innovation is to solve the right problem Failures are learned from, early and cheaply Focus is on minimum viable products and iterating after launch
Value (chapter 6)	Value proposition defined by industry Execute your current value proposition Optimize your business model as long as possible Judge change by how it impacts your current business Market success allows for complacency	Value proposition defined by changing customer needs Uncover the next opportunity for customer value Evolve before you must, to stay ahead of the curve Judge change by how it could create your next business "Only the paranoid survive"

Customer



CUSTOMERS

- In the digital age, we are moving to a world best described not by mass markets but by customer network.
- Customer are dynamically connected and interacting in ways that are changing their relationships to business and to each other and shaping business reputations and brands.
- Customer use digital tools to discover, evaluate, purchase and use products and how they share, interact and stay connected with brands.
- Therefore, businesses should rethink of their traditional marketing funnel and reexamine their customers' path to purchase.

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Competition



COMPETITION

- How businesses compete and cooperate with other firms.
- Industry boundaries are blurring.
- A major shift in the locus of competitors.

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Data



DATA

- How business produce, manage, and utilize information.
- Data generates from every conversation, interaction, or process inside or outside business (think about social media, mobile services, sensors,...)
- The “big data” tools allow firms to make new kinds of predictions, uncover unexpected patterns in business activity and unlock new sources of value.
- Data is a vital part of how every business operates, differentiates itself in the market, and generates new value.

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Innovation



INNOVATION

- The process by which new ideas are developed, tested, and brought to the market by businesses.
- Traditionally, innovation mainly focuses on finished products, where market testing was difficult and costly, and the cost of failure was high.
- Digital technologies enable a very different approach to innovation based on rapid experimentation.
- Digital technologies makes it easier and faster to test ideas, having market feedback. Assumptions are repeatedly tested based on validation by real customers.
- The focus is on minimum viable prototypes that maximize learning while minimizing cost.

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Value



VALUE

- Traditionally, a firm's value proposition was seen as fairly constant. A successful business was one that found a clear value proposition, found a point of market differentiation, and focus on executing and delivering the best version of the same value proposition to its customers.
- In the digital age, we can observe changing value propositions and disruption by new competitors.
- Any new technology may be a way to extend and improve the value proportions.
- Businesses need to seize emerging opportunities!

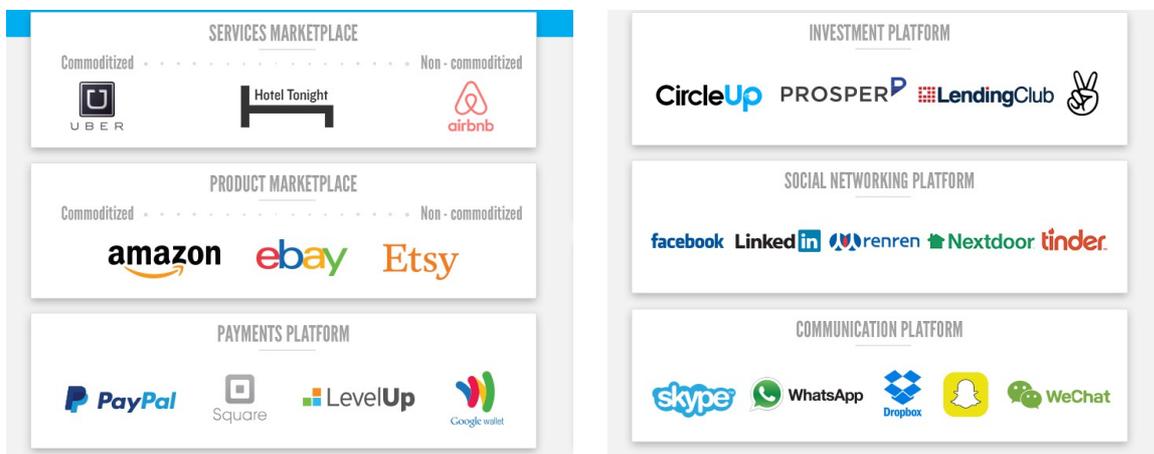
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THE DIGITAL TRANSFORMATION PLAYBOOK

DOMAINS	STRATEGIC THEMES	KEY CONCEPTS
 CUSTOMERS	<i>Harness customer networks</i>	<ul style="list-style-type: none"> reinvented marketing funnel path to purchase core behaviors of customer networks
 COMPETITION	<i>Build platforms, not just products</i>	<ul style="list-style-type: none"> platform business models (in)direct network effects (dis)intermediation competitive value trains
 DATA	<i>Turn data into assets</i>	<ul style="list-style-type: none"> templates of data value drivers of big data data-driven decision making
 INNOVATION	<i>Innovate by rapid experimentation</i>	<ul style="list-style-type: none"> divergent experimentation convergent experimentation minimum viable prototype paths to scaling up
 VALUE	<i>Adapt your value proposition</i>	<ul style="list-style-type: none"> concepts of market value paths out of a declining market steps to value prop evolution

Rise of the platform

- Many business models related to digital transformation are platforms business models.



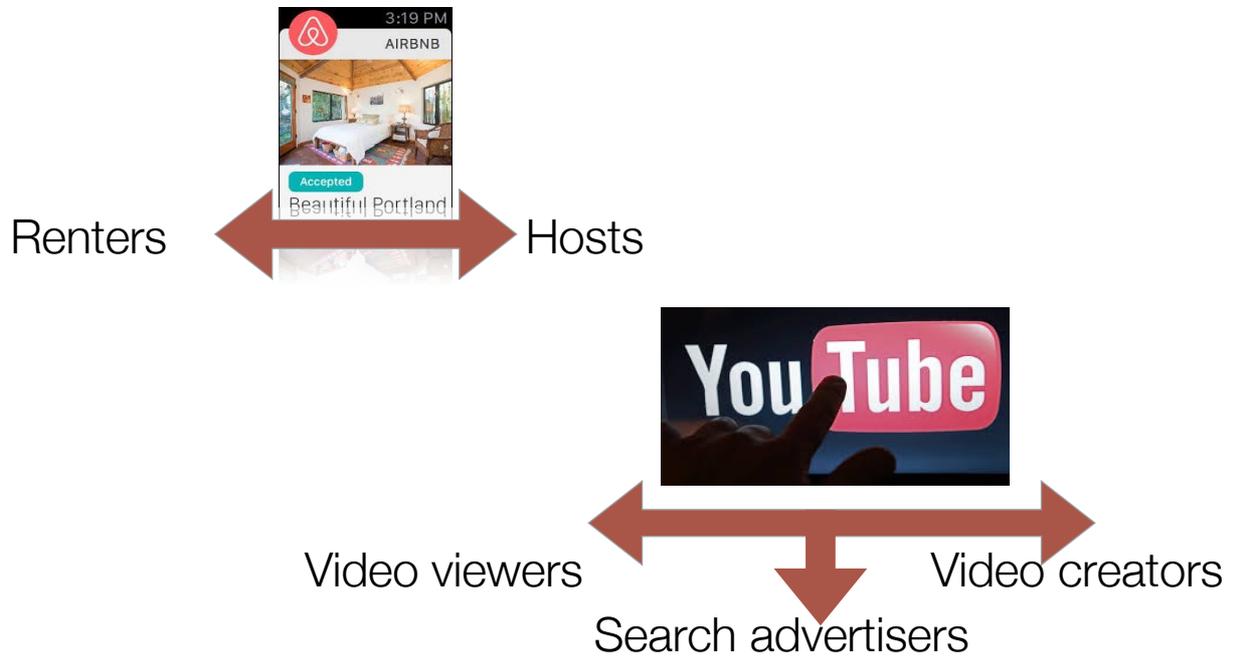
What is a Platform?

- in general “something on which you can build”.
- in tech circles may be any underlying software on which additional programs are built.
- in media industries may be a distribution channel.
- in marketing may refer to any brand or product line that could be used to launch additional products.

A definition of Platforms

- “A platform is a business that creates value by facilitating direct interactions between two or more distinct types of customers.”
- Three key points:
 1. Distinct types of customers: two or more distinct sides (buyer and seller, software developers and consumers, ...)
 2. Direct interaction: direct interactions of two or more sides
 3. Facilitation

Examples of Platforms



Types of Platforms

Exchange

Bring together two distinct groups of customers for a direct value exchange.
example: real estate brokers, eBay, Airbnb

Transaction System

Act as an intermediary between different parties to facilitate payments and financial transactions.
Example: PayPal & Apple Pay

Types of Platforms

Ad-supported media

Play an additional role for creating (or sourcing) media content that is attractive to customers
As platform attract more people, its value to advertisers increases.

Hardware /software standard

Provide a uniform standard for the design of subsequent products to enable their interoperability and the benefit the ultimate consumer.
Apple's iOS and Google's Android

Direct and Indirect Network Effects

- *Network Effect*: the value of platforms increases as more customers use them.
- *Direct Network Effect*: the increase in the number of customers or users of a product drives an increase in value or utility for the same type of user (Facebook)
- *Indirect Network Effect*: the increase in the number and quality of customers on one side of the platform drives increasing value for customers on the other side of the platform (Airbnb and Paypal).

How digital impact Platforms?

- Digital technologies are supercharging the growth and power of multisided platforms: web, on-demand cloud computing, application program interfaces (APIs), social media, mobile computing devices,...
- Digital technologies are driving four key elements of platforms:
 1. Frictionless acquisition
 2. Scalable growth
 3. On-demand access and speed
 4. Trust

How digital impact Platforms?

- Frictionless acquisition: Thanks to the Web, APIs, and software development kits, the process of acquiring new customers for a platform is increasingly frictionless.
- Scalable growth: Cloud computing allows any size of business to rapidly scale the size of its platform as fast as it can acquire new customers.
- On-demand access and speed : By mobile computing, any platform can be accessible to all of its customers anywhere at any time.
- Trust: the possibility to authenticate customers through their social media identities (Facebook, Google, Twitter) makes it much easier for businesses to use a verification system for new customers on its platform.

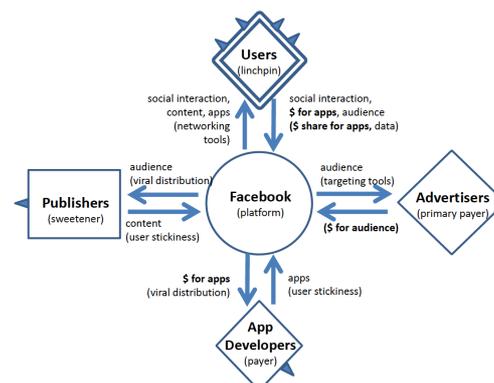
The biggest impact of digital technology on platforms may be in the size of the businesses involved (from large enterprises to start-ups)

Competitive Benefits of Platforms

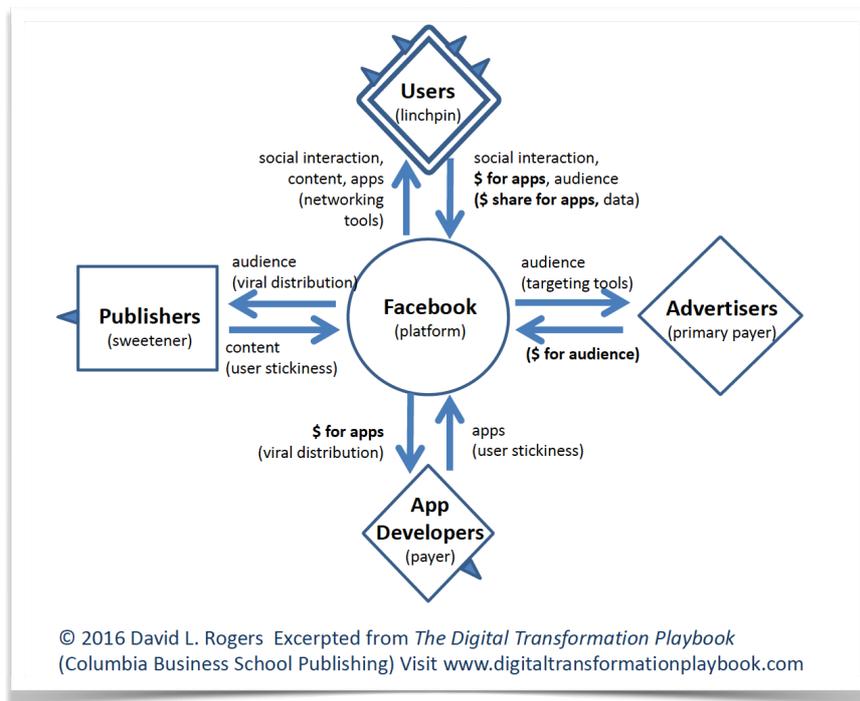
- Light in Assets: platforms tend to have few assets/employees for the revenue since customers can provide key assets and do much of the work that employees would do in a vertically integrated business. Thus, platform businesses can achieve extremely high operating margins on a percentage basis.
- Scaling fast: cloud computing architecture enables fast grow.
- Winner takes all: it is hard to be a direct competitor to catch up with Google. The real threat to Google is Apple Siri or Amazon's product search,
- Economic Efficiency: Platform business models enable the efficient use of distributed resources (labor, assets, skills), the "Sharing Economy".

Platform Business Model Map

The Platform Business Model Map is an analytic and visualization tool designed to identify all the critical parties in a platform and analyze where value creation and exchange take place among the different customers and with the platform business itself.



Example : Facebook



What we can learn from Facebook's business model



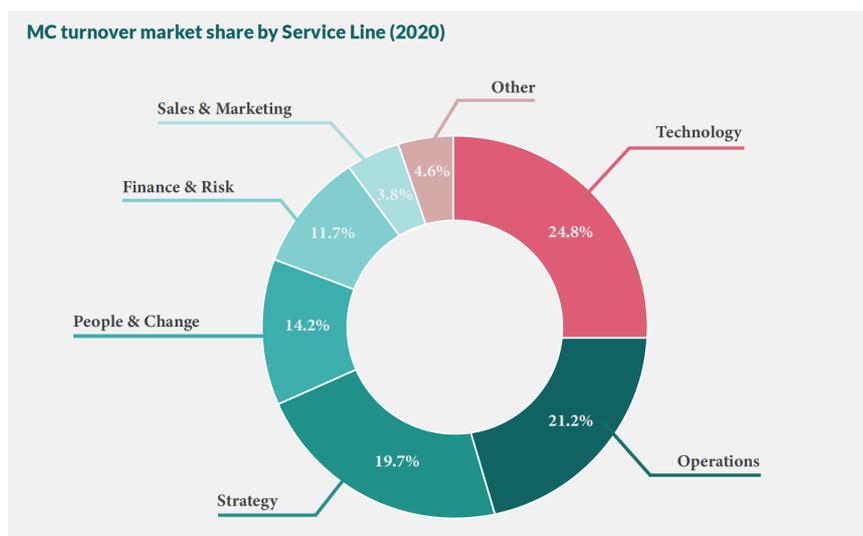
- Facebook brings together 4 types of customers: social network users, advertisers, app developers, news and content publishers.
- Facebook's business model is mix of ad-supported media and software standard
- The platform is fueled by cross-side network effects (different types of customers are attracted to each other) and same-side network effects (users are attracted by more of their own kind).
- Users are the linchpin that attract everyone else to the platform.
- Advertisers are the primary revenue source.
- News publisher provide NO revenue, but they add value for the social network users.

The shifting landscape of competition: co-opetition

- In the digital era, any relationship between two businesses is a shifting mix of competition and cooperation: co-opetition.
- Competition with rival is changing, becoming less of a direct contest.
- Industries definitions and boundaries are becoming more fluid (shift from symmetric to asymmetric competitors).
- More relationships between businesses and their supply chain partners
- Digital platforms are driving cooperation among business rivals (e.g. Google search engine in Apples' devices)
- Disruptive threats from new technologies are driving rival businesses to team together and cooperate.

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The digital transformation as a service line for Mgmt Consulting companies



The growth of the industry is strongly driven by Technology, while Strategy – the most traditional service line – is rather flat in terms of market share ... behind these figures there is a significant restructuring of the industry and of its business models driven by digital transformation.

The post-pandemic emergency has further strengthened such a trend.

[Source: FEACO 2020-21]

New business models in Mgmt Consulting

More traditional

SOLUTION SHOP

- Structured to diagnose and solve problems whose scope is undefined
- Delivers value primarily through consultants' judgment rather than through repeatable processes
- Customers pay high prices in the form of fee-for-service

EXAMPLES
McKinsey, Bain, BCG, IDEO

More innovative

VALUE-ADDED PROCESS BUSINESS

- Structured to address problems of defined scope with standard processes
- Processes are usually repeatable and controllable
- Customers pay for output only

EXAMPLES
Motista, Salesforce.com, McKinsey Solutions

Accenture, Deloitte (both moving toward solution shop)

FACILITATED NETWORK

- Structured to enable the exchange of products and services
- Customers pay fees to the network, which in turn pays the service provider

EXAMPLES
OpenIDEO, CEB, Gerson Lehrman Group, Eden McCallum, BTG

* M. Christensen, D. Wang, D. Van Bever. "Consulting on the Cusp of Disruption" – *Harvard Business Review*, October 2013

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