

Managing Transformational Technologies with Enterprise Architecture

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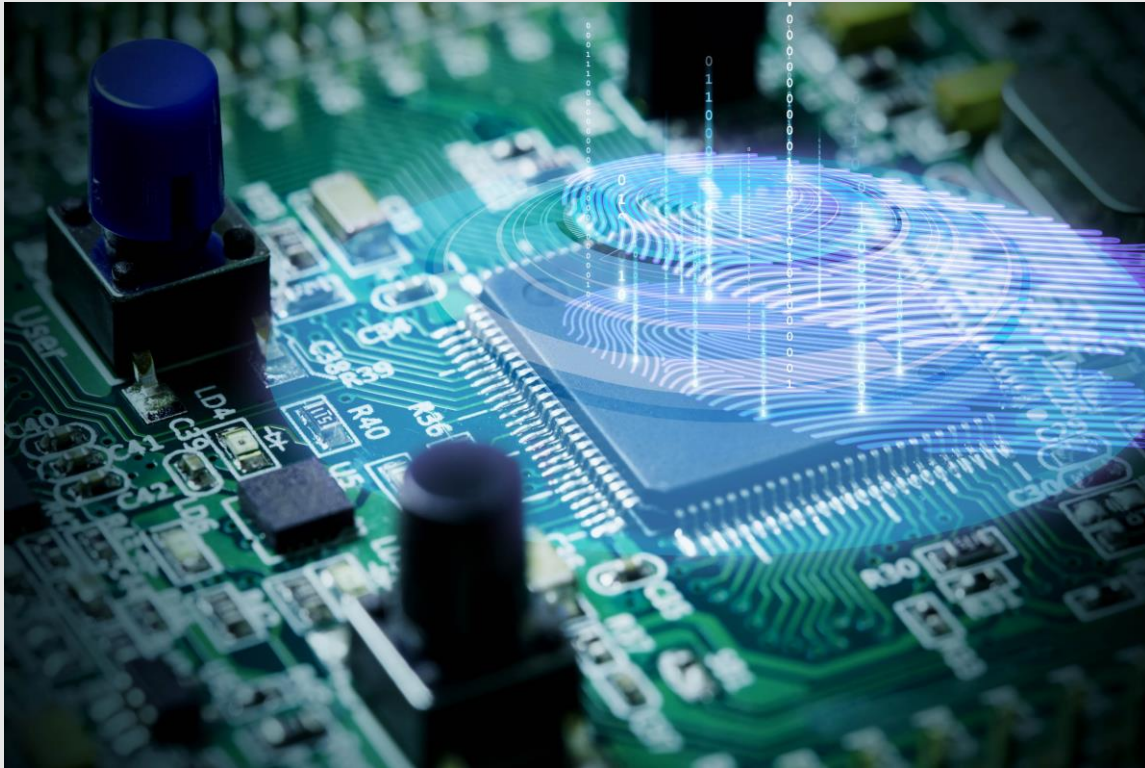
30 March 2023



Transformational technologies are innovative technologies that fundamentally change industries, societies and economies. These technologies have the potential to transform the way we live, work and interact with each other.

Source: ChatGPT

Game-changing Technologies



Source: ChatGPT

- Artificial Intelligence (AI)
- Internet of Things (IOT)
- Blockchain
- 5G Networks
- Renewable Energy

These transformational technologies are disruptive and can create new markets, change business models and alter social norms. As a result, they are closely watched by businesses, governments and consumers alike.



Source: ChatGPT



Should these transformations be
business-led or technology-led?

Digital Transformation (1) – Why, What and How



Digital Transformation (1) – Why, What and How

The image shows a YouTube video player interface. At the top left, there is a red 'U' logo and the text 'Digital Transformation (1) - why, what, how'. At the top right, there is a clock icon and a red 'U' logo with an arrow. The main title of the video is 'Our Digital Transformation Strategy'. The video content shows a man in a black polo shirt with a red 'U' logo on the chest, standing in front of a presentation slide. The slide features a central circular graphic with a red and green border. Inside the circle, the text reads 'Business Transformists' in red and 'Digital Technologists' in green. To the right of the circle, the text reads 'Maximum Tech Exploitation & Business impact'. At the bottom left of the video player, there is a 'MORE VIDEOS' button. At the bottom center, there is a play button, a volume icon, and the text '1:08 / 7:18'. At the bottom right, there is a gear icon and the text 'YouTube'.

Digital Transformation (1) - why, what, how

Our Digital Transformation Strategy

Business Transformists
Digital Technologists

Maximum Tech Exploitation & Business impact

MORE VIDEOS

1:08 / 7:18

YouTube

Digital Transformation (1) – Why, What and How



The image shows a YouTube video player interface. At the top left, there is a red 'U' logo and the text 'Digital Transformation (1) - why, what, how'. To the right of this are icons for 'Watch later' and 'Share', with a yellow pentagon containing the number '2' next to the share icon. The main content of the video is a man in a black polo shirt and glasses, gesturing with his right hand towards a whiteboard. The whiteboard has handwritten text in black, blue, and red ink. The text reads: 'How much we get out of Digital Transformation depends on how much we put into Business Transformation'. The words 'Digital Transformation' are in blue, 'Business Transformation' is in red, and the rest is in black. At the bottom left of the video player, there is a 'MORE VIDEOS' button. At the bottom center, there is a progress bar showing '7:00 / 7:18'. At the bottom right, there is a settings gear icon and the 'YouTube' logo.

Digital Transformation (1) - why, what, how

Watch later

Share 2

How much we get out of
Digital Transformation
depends on how much we
put into Business
Transformation

MORE VIDEOS

7:00 / 7:18

YouTube

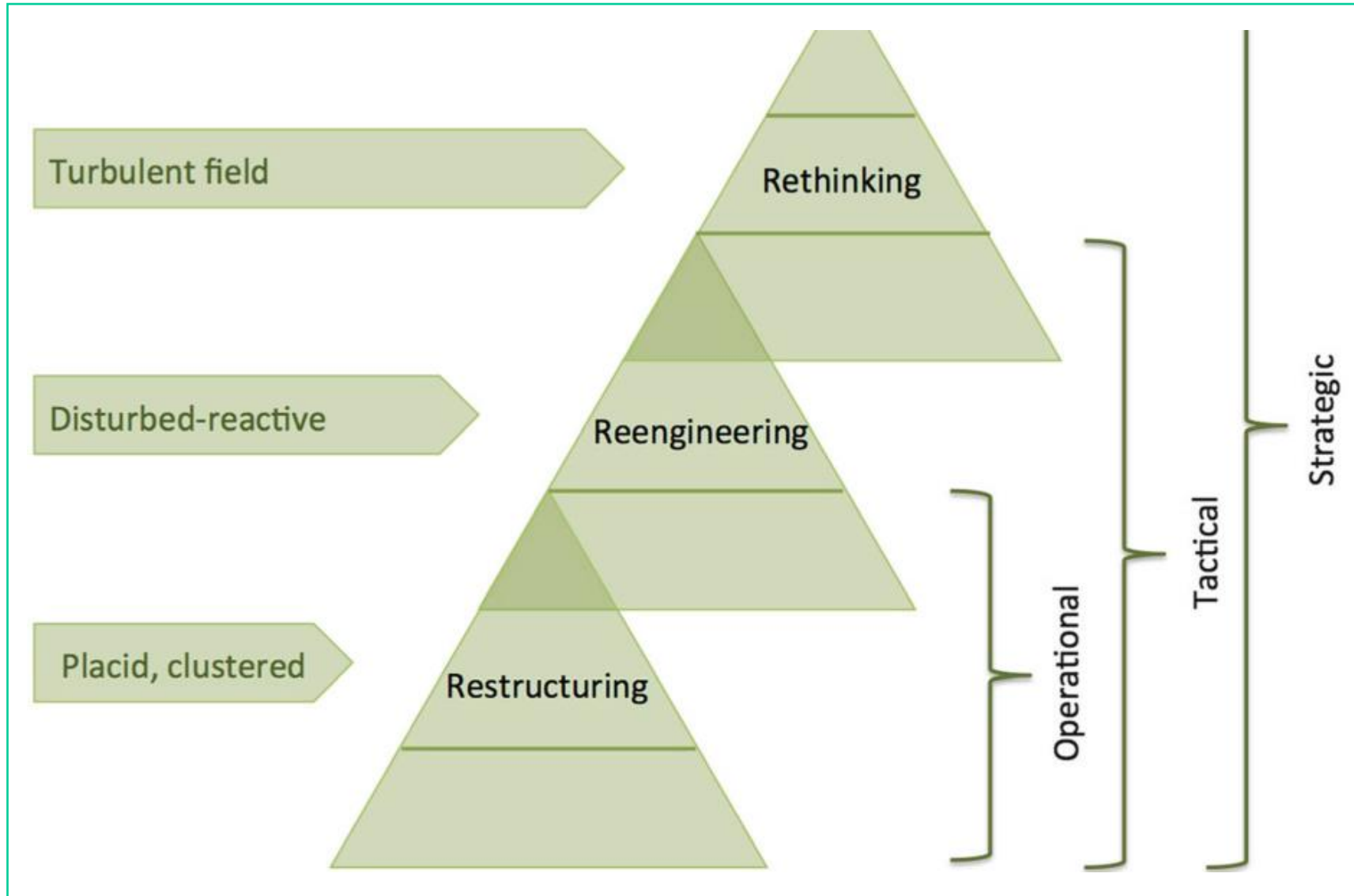
Enterprise
Transformations –
Need for
Coordination



ble 6.4 The three degrees of enterprise change

	First degree	Second degree	Third degree
Scope	Operational	Tactical	Strategic
Environmental texture	Static Clustered	Disturbed-reactive	Turbulent field
Type of intervention	Restructuring	Reengineering	Rethinking
Conceptualisation of change	Static	Dynamic	Complex
IT realms involved	Technical	Technical Socio-technical	Technical Socio-technical Ecosystemic
Focus of IT	Reliability Cost containment Efficiency	Validity Value creation Effectiveness	Resilience Value innovation Efficacy

Source: Proper H.A., Winter R., Aier S., & Kinderen S. (2017) Architectural Coordination of Enterprise Transformation 10



Source: Proper H.A., Winter R., Aier S., & Kinderen S. (2017) Architectural Coordination of Enterprise Transformation

Enterprise Transformations – Need for Coordination

- Fundamentally changing the business
- New value proposition, in terms of products and services, and/or how the enterprise is organized to provide these offerings
- Enterprise-wide perspectives to successfully deliver on the goals of the overall enterprise transformation
- Most of the standard management approaches not sufficient to successfully plan and implement enterprise transformation
- Enterprise architecture management
 - holistic view and covering all details at the same time
 - improving the coordination of enterprise transformation

Source: Proper H.A., Winter R., Aier S., & Kinderen S. (2017) Architectural Coordination of Enterprise Transformation



A new way of thinking at all levels



Cross-functional team from different backgrounds and perspectives



Discussions on capturing the strategic value and creating business value



Rapid change of business models, customer experience and business processes to create value enabled by new technologies

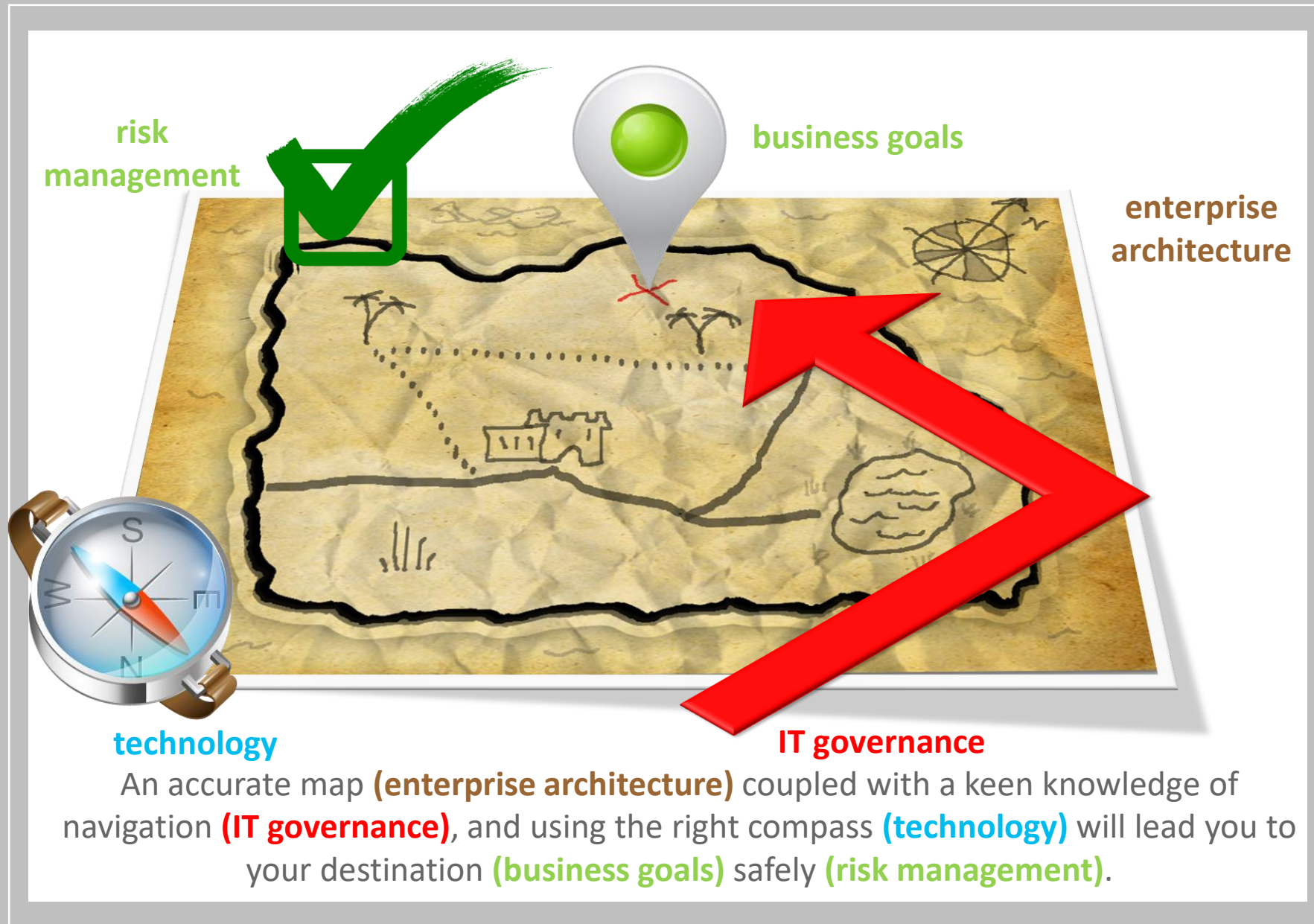


Management of sheer number and breadth of digital solutions and the risk involved



Enterprise architecture is a management tool

Exploitation of technology at transformative scale involves.....



Four Architectural Domains

- **Business architecture:** includes information on business strategy, governance, organization and how to adapt any existing processes within the organization.
- **Applications architecture:** a blueprint for structuring and deploying application systems and in accordance with business goals, other organizational frameworks and all core business processes.
- **Data architecture:** defining the organization's data storage, management and maintenance, including logical and physical data models.
- **Technical architecture:** also called technology architecture; it describes all necessary hardware, software and IT infrastructure involved in developing and deploying business applications.

Source : TOGAF



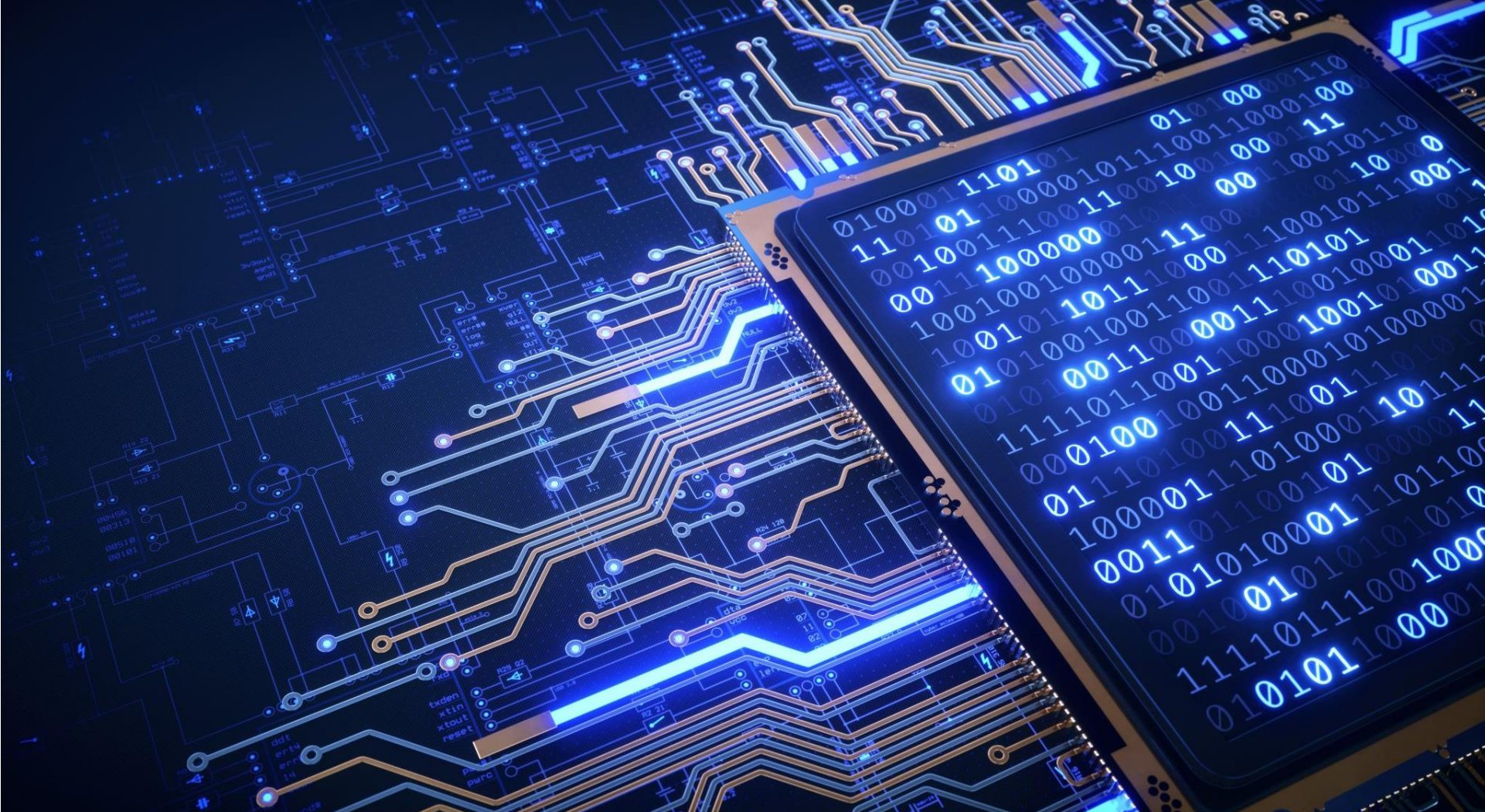
Business Architect articulates the business areas to be digitalized and meeting business needs



Application Architect designs a blueprint of software applications and their interactions to meet the business requirements



Data Architect depicts the data models & data objects supporting the business and decision making




Technical Architects, of different technical specialisations, lead the technical blueprints to successful implementation



Without business architecture, “**EA efforts are just IT architecture,**” and will fail to demonstrate and deliver significant business value outcomes.

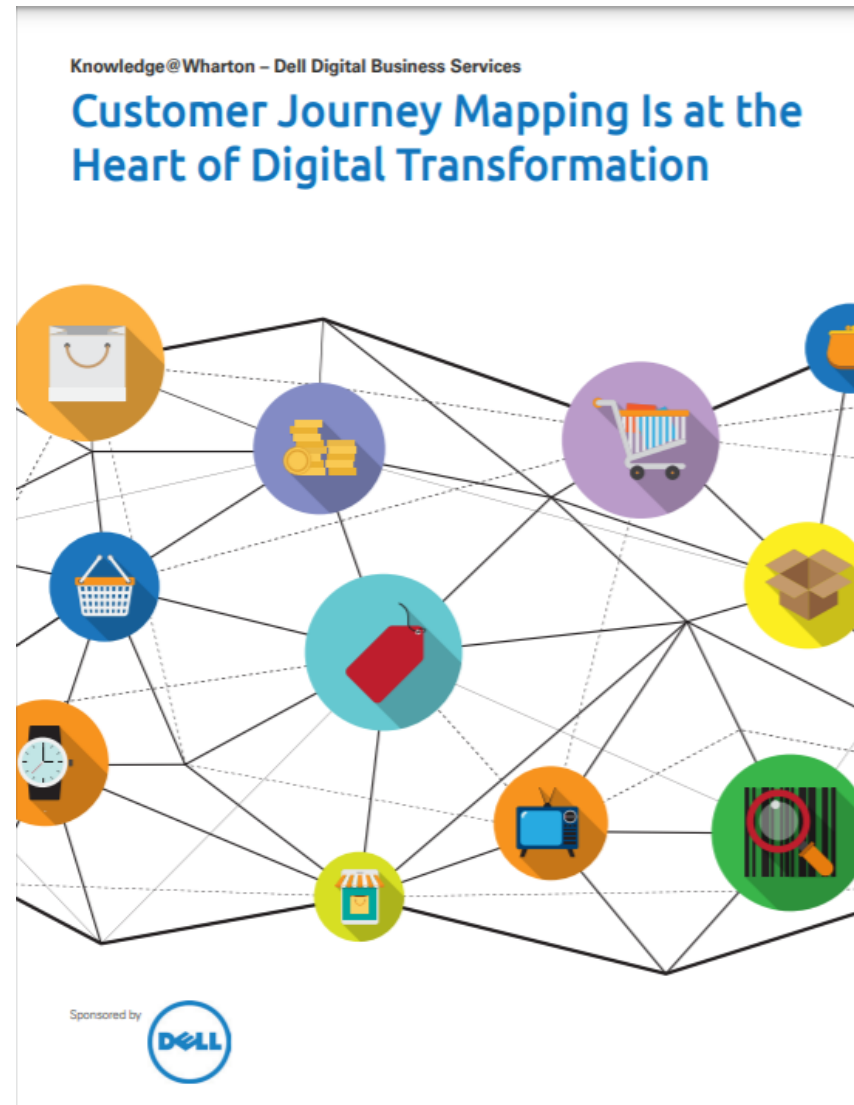
– by Betsy Burton, Marcus Blosch, “Business Architecture is not optional for business-outcome-driven EA”, Gartner(2016)

- 
- A person with dark hair, wearing a light-colored top and a dark skirt, is leaning over a table. They are pointing with their right index finger at a large, detailed architectural or business plan spread out on the table. The plan features various lines, boxes, and text, typical of a complex organizational or technical drawing. The person's left hand is resting on the table near the plan. The background is slightly blurred, showing other people and a bright light source.
- Organisations that support business architecture as an integral part of EA have a significantly higher ability to execute on their business strategy, because they have a clear understanding of the strategy and its impact on business and IT, and guidance to drive delivery.
 - Business Architecture is essential to strategically respond to massively disruptive business and technology change.
 - Business architecture provides an insight into impacts, constraints, risks and opportunities to support strategic planning.
 - By applying business architecture, EA practitioners can mitigate many of the key risk areas for business strategy.

Source: Betsy Burton, Marcus Bloch, “Business Architecture is not optional for business-outcome-driven EA”, Gartner(2016)

- “Typically, digital is associated only with providing a superior customer experience. But digital can also help create new business models, drive operational excellence and enhance employee engagement,” says Raman Sapra, global head of Dell’s digital business services unit.
- But before embarking on a digital transformation, organizations need to first identify their business imperatives and priorities, Sapra says. They need to understand what their customers, employees, partners and other stakeholders desire. They also must identify the digital possibilities in their industry. Using these benchmarks as a foundation, organizations can tailor a digital strategy and roadmap, and then proceed to build their digital initiatives.
- There is one critical tool for successful digital transformation — smart customer journey mapping. “It is at the heart of digital transformation,” says Sapra.

Source : Customer Journey Mapping Is at the Heart of Digital Transformation, Knowledge@Wharton, November 2015



You're holding a handbook for visionaries, game changers,
and challengers striving to defy outmoded business models
and design tomorrow's enterprises. It's a book for the...

Business Model Generation

WRITTEN BY
Alexander Osterwalder & Yves Pigneur

CO-CREATED BY
An amazing crowd of 470 practitioners from 45 countries

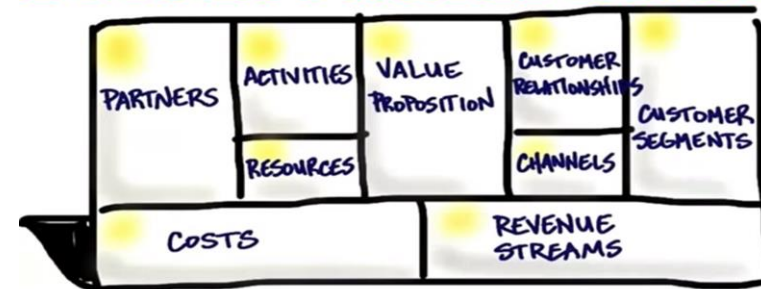
DESIGNED BY
Alan Smith, The Movement

WILEY



- The business model canvas — as opposed to the traditional, intricate business plan — helps organizations conduct structured, tangible, and strategic conversations around new businesses or existing ones. Leading global companies like GE, P&G, and Nestlé use the canvas to manage strategy or create new growth engines, while start-ups use it in their search for the right business model. The canvas's main objective is to help companies move beyond product-centric thinking and towards business model thinking.
- - by Alexander Osterwalder, A Better Way to Think About Your Business Model, May 6, 2013, Harvard Business Review

BUSINESS MODEL CANVAS



Business Capability Mapping/Modelling

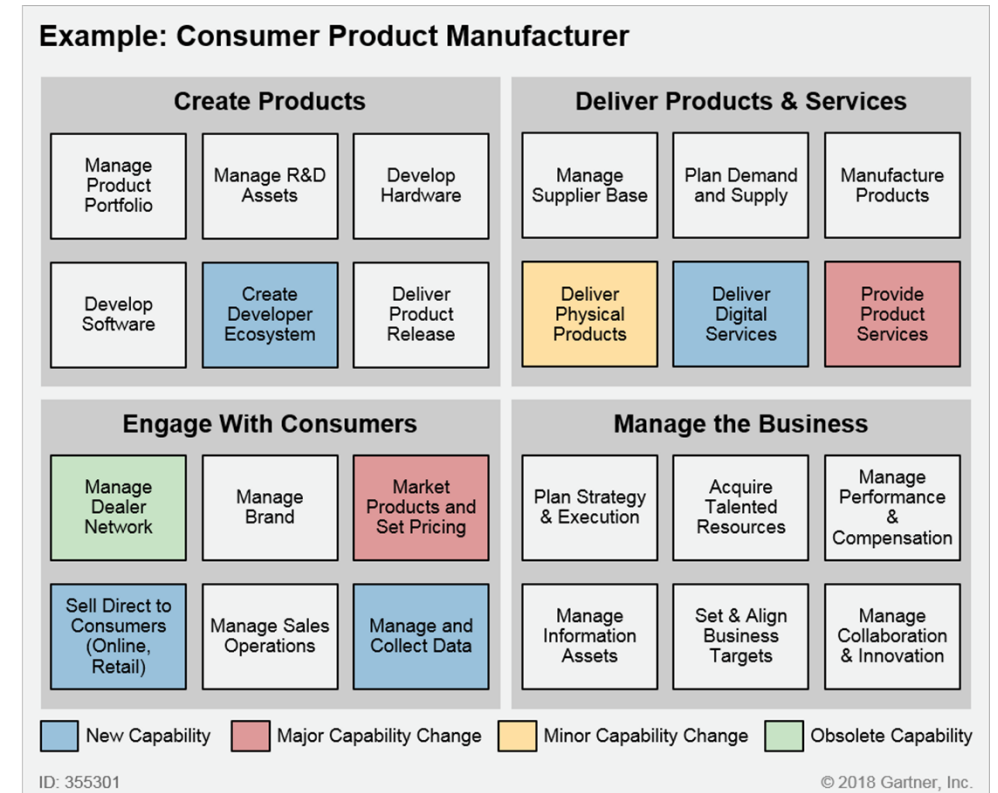
What are the business capabilities?

i.e. a model of what a business does, not how and who

It aligns the technology to business. Enterprise architects are having conversations with the business at business strategy level, not IT strategy level and IT systems

Enterprise architects can talk to the business in their own language

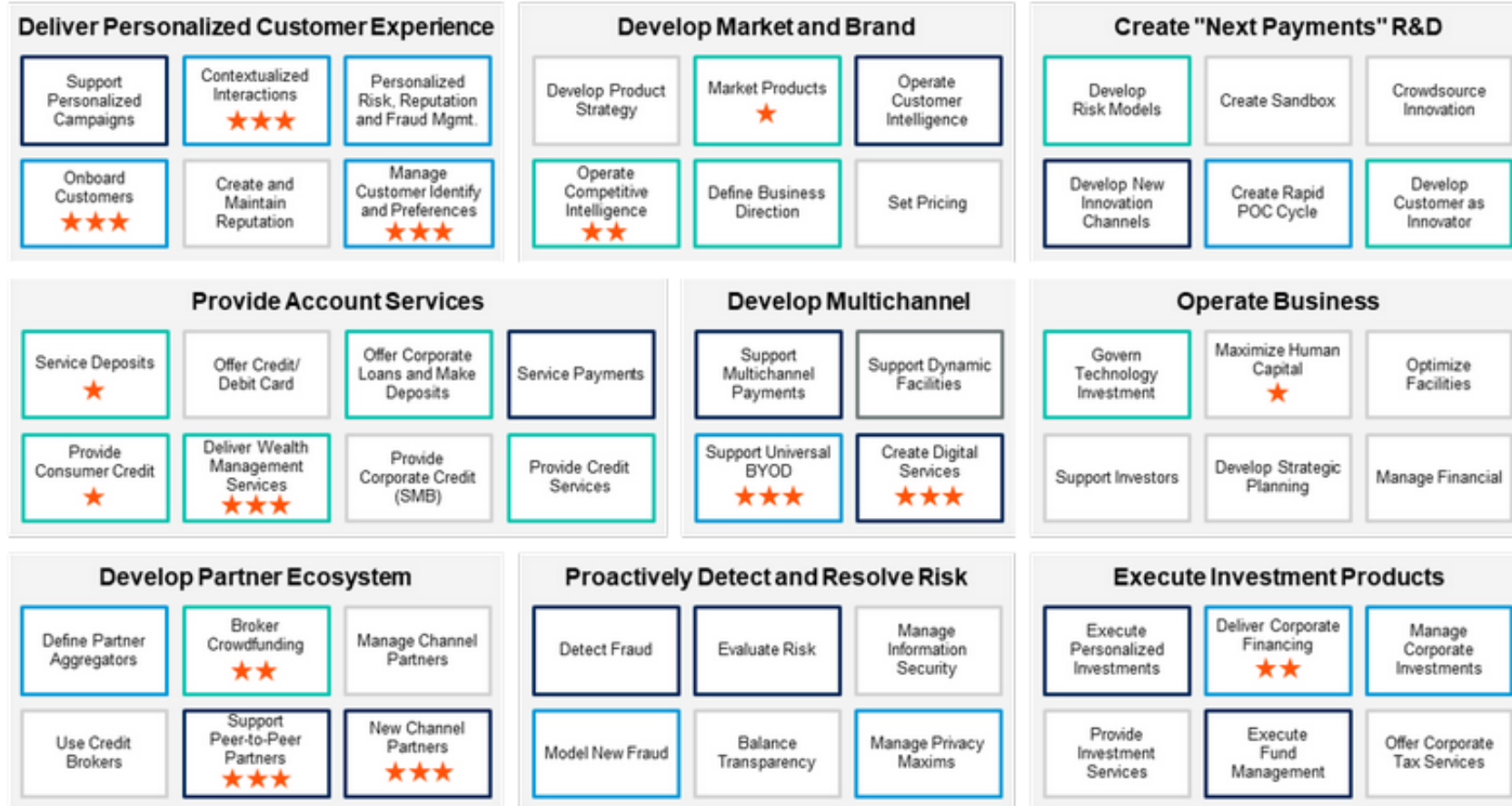
It is a management tool for high-level strategic analysis, identifying the competitive advantages, ensuring right investment



Plotting the Impact of AI Technologies on a Business Capability Model

Strategic Alignment: High Moderate Low

Benefit Assessment: ★★★ Transformational/High Benefit ★★ Moderate Benefit ★ Low Benefit



Source: Gartner (January 2020)

BYOD = bring your own device; POC = proof of concept; SMB = small and midsize business

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Lightweight Enterprise Architecture Framework

- In the digital transformation scenario, it is of no use to define the whole target architecture in terms of business, information system and technology architecture after obtaining a statement of architecture work, which is based on the architecture vision.
- The enterprise architect needs her assignment based on the business strategy, the underlying business ideas and the business objective.
- The digital transformation program can and will not wait for a comprehensive architecture designed by the omniscient and omnipotent enterprise architect.

Source: Oliver F. Nandico, Chapter 7 – A Framework to Support Digital Transformation, Emerging Trends in the Evolution of Service-Oriented and Enterprise Architectures

.....there are more than one million professionals worldwide classified as business or Information Technology (IT) architects—collectively falling under the umbrella category of "Enterprise architect." They can interpret and shape deployment of business strategies and directives, by crafting a wide range of business transformations, leading to better business decisions. Yet enterprise architecture as historically practiced has garnered a reputation as a "techie" discipline that business executives often dismiss or simply ignore, threatening to push the practice into irrelevancy. John Zachman of Zachman Framework fame puts it best when he says, "The business should be doing enterprise architecture, but they won't so the information technology team has to."

Business Architecture: Putting "Business" into Enterprise Architecture

By WILLIAM M. ULRICH, PRESIDENT, BUSINESS ARCHITECTURE GUILD, DR. RICHARD MARK SOLEY, CHAIRMAN & CEO, OBJECT MANAGEMENT GROUP

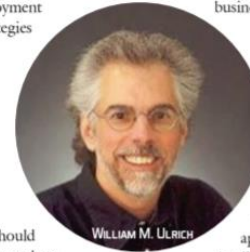
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Placing a technical stamp on enterprise architecture, deserved in part due to an historical emphasis on technology rather than business capabilities, has several downsides.

and delivery. It just about guarantees failure.

Shifting enterprise architecture's emphasis from technology towards a business perspective requires business architecture to move to the forefront of the discussion. Business architecture enables management to drive strategy deployment, business priorities, portfolio management, initiative scope definition and investment planning from a business (versus a technical) perspective.



Putting "Business" into Enterprise Architecture

To understand the role of business architecture in context, we offer a brief overview of enterprise architecture. One common view of enterprise architecture is shown in figure 1, which highlights how business architecture drives and informs three vertical IT architecture views: application, data and technical architecture.

Application architecture frames the applications and services that automate business capabilities, data architecture frames information into accessible patterns and structures, and technical architecture frames platforms, tooling and protocols. Solution architecture represents a

Source : Putting "Business" into Enterprise Architecture, by William M. Ulrich and Dr. Richard Mark Soley (2016)



"If the only tool you have is a hammer, you
tend to see every problem as a nail"
-Abraham Maslow



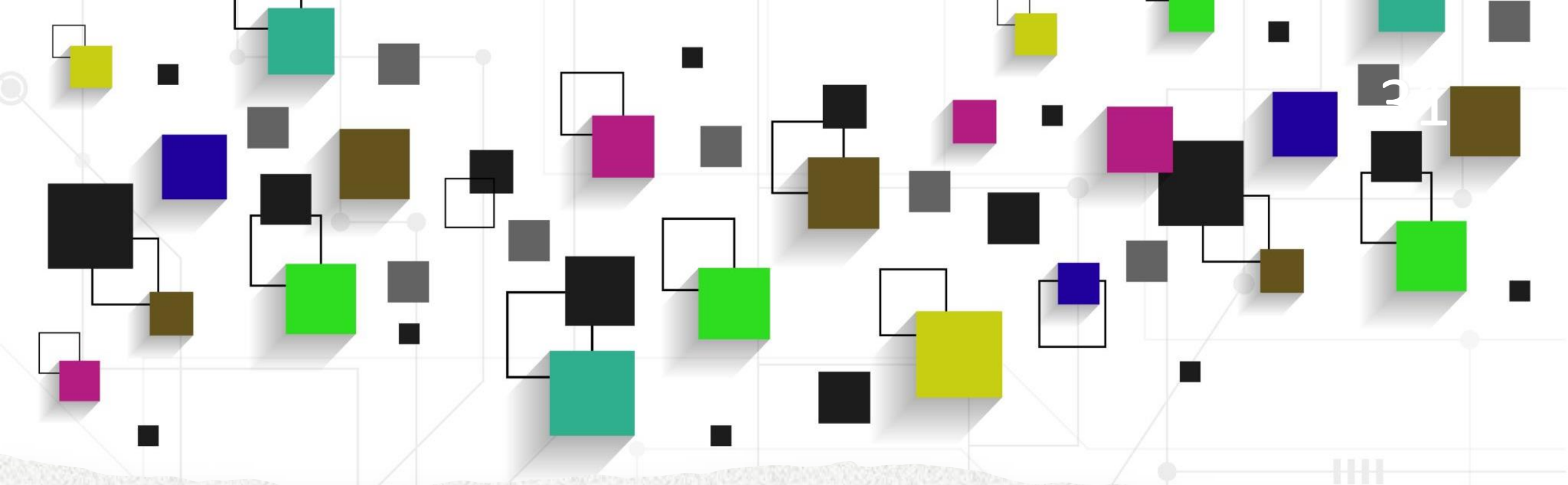
Abraham Maslow

1908-1970

The father of humanistic
psychology and creator
of Maslow's Hierarchy
of Needs.

Digital Transformation (2) – Do it Right





Thank You