Plattform Industrie 4.0

Driving a successful Digital Transformation: Challenges and Potential for the German Industry

A discussion paper from WG Organizational Transformation

Working Group Digital Business Models in Industrie 4.0

Driving a successful Digital Transformation
A holistic approach addressing all digital domains is key

- Many Enterprises start their transformation journey by selectively addressing the most obvious digital domains for them, such as

  - Digital Technology,
  - Digital Organization or even,
  - Digital Culture.

- **Refrain from the temptation to take the easy way out !**

- In most cases, enterprises are facing key challenges in Strategy, Implementation, People Development and Culture.
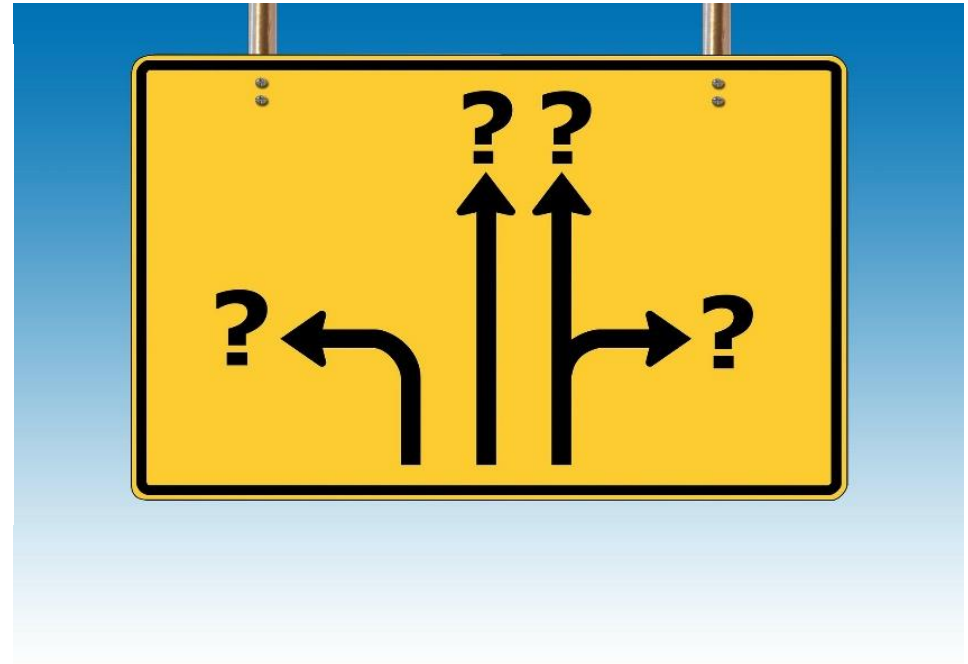
Digital Organization

Digital Technology

Digital Culture
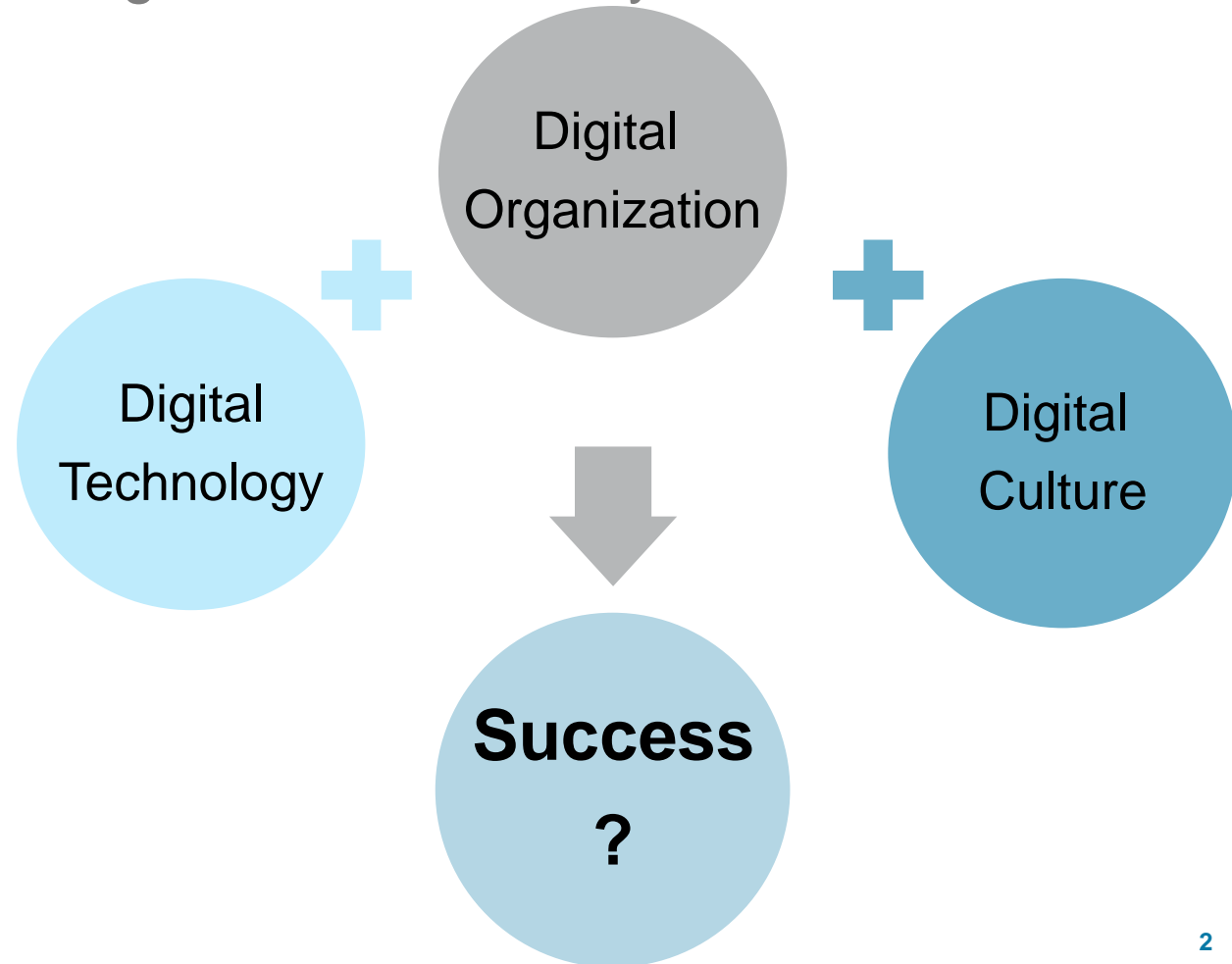
Success ?

Driving a successful Digital Transformation
Challenge #1

Strategy

What do we want to achieve?
Where are we heading?
What will we do?
How do we start?

Driving a successful Digital Transformation
Challenge #2

People Development

Who is able to evaluate and validate?
Who can implement?
How do we get the new skills
and competencies on board ?

Driving a successful Digital Transformation
Challenge #3

Implementation

What approach do we follow?

How do we organize, manage and budget our activities?

Which technologies and methods do we choose?

How do we manage the make vs. partner vs. buy discussions?

How do we cooperate with vendors & partners?

Cultural Behavior

Which behavior fosters and which behavior hinders the intended transformation?

Which changes do we aim for in the way we…

- communicate?
- cooperate?
- lead?
- work?

And: How do we do this?

Driving a successful Digital Transformation
Challenge #5

External Factors

Which legal regulations are relevant in which region? How are they evolving?

What are the changes & dynamism taking place in value chain and competition?

How mature, reliable and relevant are the technologies, standards and reference architectures to your industry?

What is the pace of development in the different areas?

Driving a successful Digital Transformation
A divers set of solution patterns rather than a „one size fits all" solution
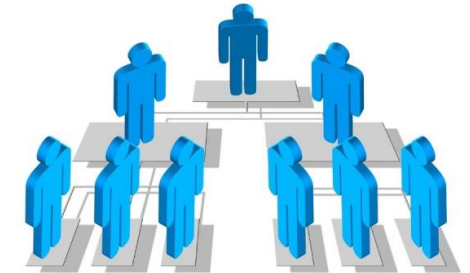
Strategy

People

Implementation

vs.

Culture

vs.
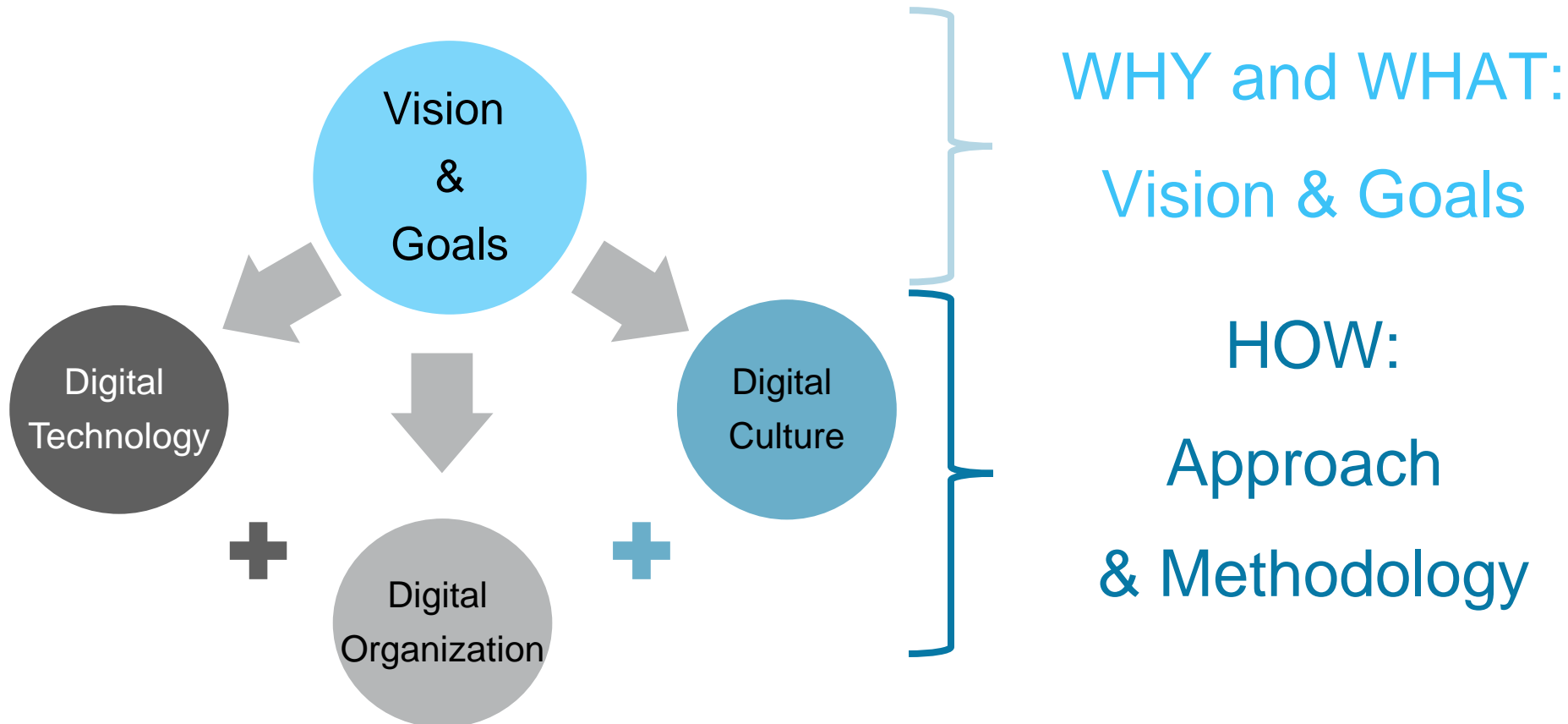
vs.

Driving a successful Digital Transformation
Be clear on Vision and Goals and cascade down to right Approach and Methodology

P L A T T F O R M
INDUSTRIE 4.0

Vision & Goals

Digital Technology

Digital Culture

Digital Organization

WHY and WHAT:

Vision & Goals

HOW:

Approach & Methodology

Driving a successful Digital Transformation
Coexistence of differing Business Objectives

Explore New Horizons

- Build-up digital Competencies & Skills
- Enable and empower People and Organization
- Generate new ideas
- Experiment and validate new technologies and business models

Reduce Costs

- Operational Excellence (Efficiency, Quality, …) via IT / Digital / Data, e.g. in Manufacturing & Logistic, Finance & Controlling, …
- Automation of Processes (Robotics, Chatbots, RPA, …)

Motivation & Objectives

Diversification / New Business

- Develop and market digital Offerings like Software Applications, Data-driven solutions
- Enter to Platform- and Marketplace-driven business models

Increase Revenues

- Digital Marketing, Sales Channels, Customer Interaction and Customer Intimacy
- Digital Add-ons & Services to core business
- Transition from Product Business to „X as a service"-Business

Driving a successful Digital Transformation
Ambidexterity = Exploration vs. Exploitation

EXPLORATION

- Long-term Perspective
- Not necessary connected to Core Business
- Innovation & Disruption
- Address new Opportunities, reduce Risk
- New Business Fields
- Growth-oriented
- Forward-looking Investments

Explore New Horizons

Reduce Costs

Motivation & Objectives
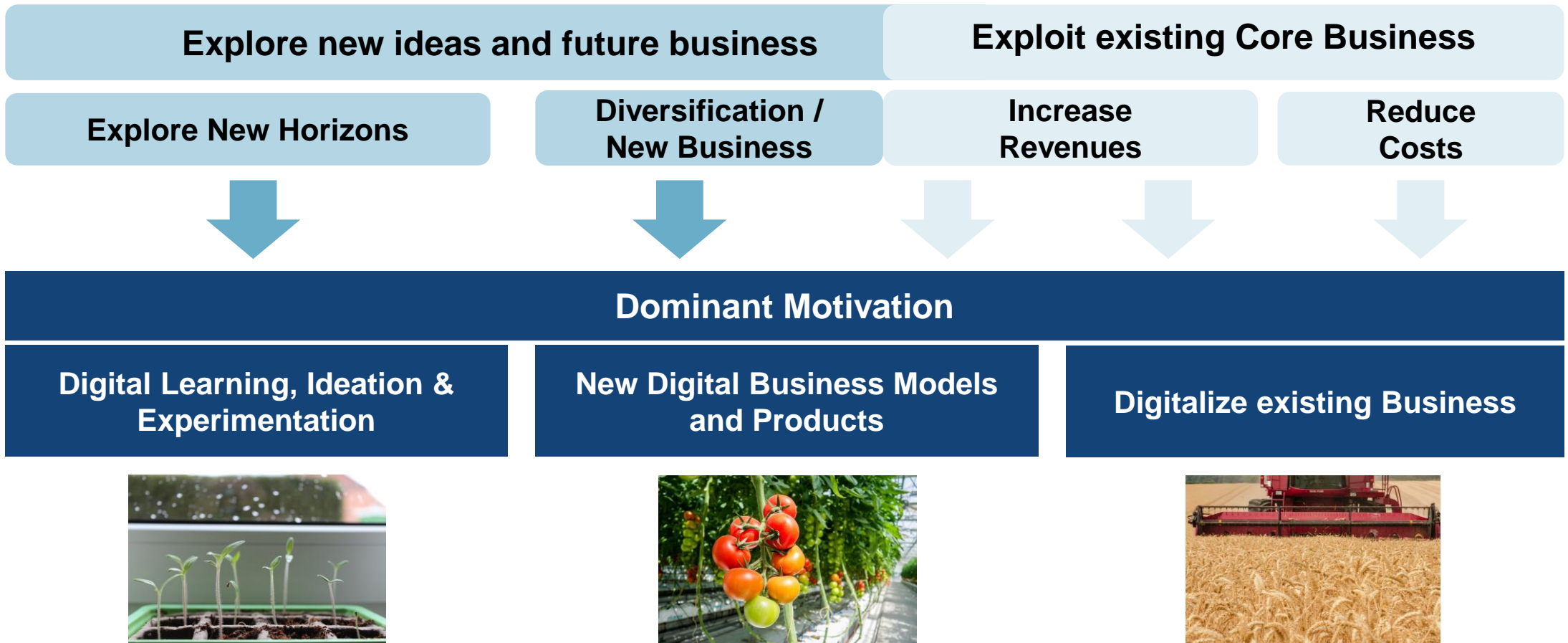
Diversification / New Business

Increase Revenues

EXPLOITATION

- Short and Midterm Perspective
- Closely linked to Core Business
- Efficiency und Discipline
- Productivity-oriented
- Preserve and protect existing Business
- Improve, adjust and evolve
- Operational Excellence
- Maximize current value capturing

Driving a successful Digital Transformation
3 dominant Motivations come to the core

Explore new ideas and future business		Exploit existing Core Business	
Explore New Horizons	**Diversification / New Business**	**Increase Revenues**	**Reduce Costs**

Dominant Motivation

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Driving a successful Digital Transformation
Definition of Success depends on the dominant Motivation

Dominant Motivation

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business
• Organizational ability to reskill and innovate • Build up digital Competencies – technical and organizational • Qualified Ideas for New Business • Learn & develop ability to evaluate from unsuccessful initiatives • Typically not measurable in €	• Growth in New Business Areas as well as Add-on Business, new customer segments • Data-based approach for decisions, Products and Services • Image push through Innovation • Often unprofitable in the beginning. Initially ROI not plannable	• Reduced Costs, Increased Revenue • Stable, recurring revenues • Improved competitive Positioning & Customer loyalty • Efficiency gain, Time To Market, … • Measurable in €, ROI plannable

How do you measure Success?

Driving a successful Digital Transformation
Challenge: Strategy

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Tips & Tricks

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business
• Strategic direction is necessary, although the classical Strategic Planning tools are inadequate • Defined scope through strategic search fields and learning targets • Development of Digital Competencies and Ability to judge as an „Asset" in itself • Sheltered space for Innovation & Disruption • „High hopes, low expectations"	• Long-term Vision needs to be in line with corporate strategy • Basic premise: business idea is scalable • Starting with realistic, verifiable steps, focus on Customer Value and Market Feedback • Adaptive Project Management based on regular Feedback-cycles and definition of suitable KPIs • Be smart & „copy with pride", learn from experiments	• ROI-driven Digitalization Objectives in combination with Operational Excellence & Process targets • Long-term plan to be deployed in the Line Organization • Priorities based on expected Benefits • First ensure stable foundation in IT Systems and Processes • Broad Communication of Strategy, create acceptance from Employees and Customers

Pitfalls

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business
• **Expecting too much too soon** • **Actionism without strategic focus**	• **Beating dead horses** • **Run out of patience**	• **Landscape of Lighthouse projects** • **Inconsequent implementation**

14

Driving a successful Digital Transformation
Challenge: Implementation

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Tips & Tricks

Digital Learning, Ideation & Experimentation

- Explorative Approach for Product and Business Model Innovation
- Multi-disciplinary Team with direct contact to Customers and their needs
- Cooperation with external parties like research and Start-ups
- Limit Time and Budget to ensure Speed and Focus on the essentials
- Honest, critical and consequent appraisal of Ideas
- In smaller Firms: ideally a staff unit directly under Top Management

New Digital Business Models and Products

- Lean Start-Up (build-measure-learn)
- Target fast Customer Feedback, start project-based, but think about scaling mechanisms early
- Go-to-Market & Operations are as important as Technology, engage relevant Stakeholders early
- Integrate missing building blocks in step-wise approach with the help of partner network
- Keep away from rules & structures of mature business in exploit mode

Digitalize existing Business

- Integrate Digital Organization within Line Organization & close to functional responsibility
- Management Commitment on all levels, adequate Incentives
- Working in Multi-disciplinary teams, Incorporate User ideas & feedback
- Value Consistency, Reliability and Stability over „fancy" Innovation
- Refrain from digitalizing immature processes
- Communicate Success Stories

Pitfalls

Digital Learning, Ideation & Experimentation
- **Insufficient Resources and Priority**
- **Too many uncoordinated Activities**

New Digital Business Models and Products
- **Missing Management Support**
- **Failure to scale or to master complexity**

Digitalize existing Business
- **Immature Innovations put core business at risk**

15

Driving a successful Digital Transformation
Challenge: People Development

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Tips & Tricks

• Multi-disciplinary Teams with internal and external Partners • Know-how about new Technologies, Trends, Methods and Business Model Innovation • Flexibility, Ability to deal with Ambiguity and to judge about digital business potential • Willingness to change job position when validated idea is going to be implemented somewhere else	• Leadership team: generalist Entrepreneurs with strong Customer & Market focus • Ability to navigate between Explore und Exploit Phases and to adapt leadership style to situation • Know-how about Digital Business & Technologies as well as market & domain knowledge • Entrepreneurial Pragmatism: ability to priorities, improvise and orchestrate	• Role Models on Leadership Level with Responsibility, cooperative Style and Change Management Skills • Competency Mix: profound Understanding of Core Business needs, Customer Requirements, Processes and of mature IT and Digital Technologies • Perseverance and Discipline needed • Conservatively Curious: Open for new Ideas & decides conservatively

Pitfalls

• **Failing to let go** • **Too much tech or research focus**	• **Administration mindset instead of Entrepreneurship** • **Getting crunched in internal politics**	• **One Dimensional Competency Profile at Leadership level**

Driving a successful Digital Transformation
Challenge: Culture

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Tips & Tricks

• Explorative and Agile ways of working • Maintain connect to Core Business and Reality, take care of successful transfer to implementing unit • Accept that Failure can be a good Teacher; at the same time do not tolerate Incompetency • Show Gratitude that the Core Business is financing these Activities • Be careful to not arouse envy for the available Free Space and Resources	• Growth and Scaling Phase requires constant adaption of Organization and working ways, adaptability and willingness to learn needed • Pursue high Standards; at the same time leverage and appreciate Improvisation Talents • Balance between independence from Core Business versus Cooperation with Core Business, constructive Engagement	• Be aware of the Tension between Explore and Exploit Mindset, too much Explore is contra productive, seemingly minor mistakes may have major Impact • Create Incentive for cooperation between functional and divisional organizational units • Important: Change Management, Integration & Involvement of Employees • Caution: „Digital" has high Visibility and can lead to unnecessary infighting

Pitfalls

• **Innovation Transfer Failure due to Culture Gap & „not invented here"**	• **Digital Star Culture despite credible Successes**	• **Change Management Effort is underestimated**

Driving a successful Digital Transformation
Challenge: External Factors

Digital Learning, Ideation & Experimentation	New Digital Business Models and Products	Digitalize existing Business

Tips & Tricks

• Learn from Innovations of Champions • Networking, Leverage external Know-how • Evaluate not just Technologies but also Business Models, Market Behavior and regional differences • Unbureaucratic Collaboration with Start-ups and external Partners	• Be well informed about legal and regulatory guidelines as well as the regional differences • Increase Cadence to evaluate development in Market, Trends, Technologies and competitive Landscape • Delve intensively into Open Source Projects as well as understanding Licensing and Usage conditions • Consider external Options for scaling (Partner or Acquisition)	• External Know-how / Technology – Modules are often available quicker and cheaper than assumed • Consider European Law a Strength rather than a Weakness (e.g. GDPR) • Develop agile and fair Business Models for Data between Business Partners

Pitfalls

• **Belief that one can do everything by himself**	• **Be hindered by Lawyers**	• **Stop Initiatives due to Legal Ambiguities**

Driving a successful Digital Transformation
Key Take-Aways

PEOPLE DEVELOPMENT

Key Skills
- Flexibility & Willingness to Learn
- Communication
- Cooperate & Collaborate

CULTURE

Organizational Silos eat every **Digital Strategy** for **Breakfast**

STRATEGY

Strategy is Dead, long live Strategic Thinking!

IMPLEMENTATION

One fails seldom due to Technology, more often **unsuitable structures and methods** or **missing product-market fit** are the root cause of Failure

EXTERNAL FACTORS

The world is innovating at a tremendous pace, important to keep our **Eyes Open** to the Dynamics!

Contributing Authors

Lilian Matischok, Robert Bosch GmbH

Dr. Alexander Arndt, Laserline GmbH

Alexander Sayer, Carl Zeiss AG

Dr. Nadja Hoßbach, Fraunhofer IIS, Arbeitsgruppe für Supply Chain Services SCS

Victor Naumann, Fraunhofer IIS, Arbeitsgruppe für Supply Chain Services SCS

Christoph Plass, UNITY AG

Dr. Hannes Leonardy, UNITY AG

Rohitashwa Pant, Kuka AG

Many thanks for Use Cases und Inputs to all Members and Guests of the WG6!

Images: pixabay.com   www.plattform-i40.de