

# Digitalisation Strategy & Architecture

**Jan Amtoft, CIO in ROCKWOOL**

ATV temamøde  
October 2nd, 2017

## Upcoming

11.09.2017 CBS Cand.Merc. IT - Digitalisation strategies

02.10.2017 [ATV - Virksomheders digitalisering - digital transformation i store virksomheder](#)

## Retrospective (highlights)

16.08.2017 EA Summer School 2017 - Digitalisation strategy and architecture

08.06.2017 Mood: CIO expectations to EA/Digital outcomes

24.01.2017 DMU/Nils Brock. Digitalisation strategies.

22.11.2016 Digital Leadership (Dansk IT)

27.09.2016 Dansk IT - Webinar: Det digitale lederskab - Den digitale femkæmpers nøglediscipliner

21.09.2016 600minutes ExecutiveIT (Management Events) - CIO - death or resurrection?

15.09.2016 CBS / The main challenges of the CIO / Digital Innovation and Transformation

16.08.2016 EA Summer School/Digital Disruptions and Digital Architecture

21.04.2016 DMU/NB Organic Growth Scenarios in strategy

23.02.2016 Klumme i Børsen ["Et digitalt Danmark"](#)

26.01.2016 Klumme i Børsen ["Få det nu fixet" - om digitalisering af Danmark](#)

15.12.2015 Klumme i Børsen: ["Debat om den offentlige digitalisering ønskes"](#)

04.11.2015 DanskIT EA-2015 "The Enterprise Architect in Digital Transformations"

03.11.2015 Column in Børsen ["Den Digitale Bestyrelse"](#)

06.10.2015 ITU master class "National culture and diversity management"

08.09.2015 Column in Børsen ["Øg den digitale forretningsforståelse"](#)

20.08.2015 DTU "The LEGO journey - ups and downs of a turn-around"

19.08.2015 Faarup & Partners ["Porteføljestyring - af de rigtige projekter". Århus](#)

11.08.2015 ITU EA Summer School ["The Future IT organization and the Digital Architect"](#)

23.06.2015 Børsen - Digital: Den Digitale Frontkæmper

## Food for thought

*"If you can't explain it simply, you don't understand it well enough."*

*Albert Einstein*

## The Man



"Digital services and products are essential in future value creation. Analog businesses will become *investor repellants* in the future." Jan Amtoft

# The Difference Between **ROCKWOOL** & Candy Floss

Fire resistant  
Insulating  
Sound dampening



Furnace @ 1500°



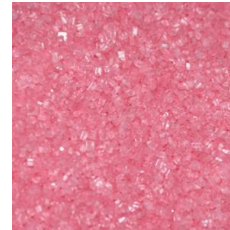
Basalt (volcanic rock)



Sweet  
Sticky  
More sticky



Cooker @ 150°



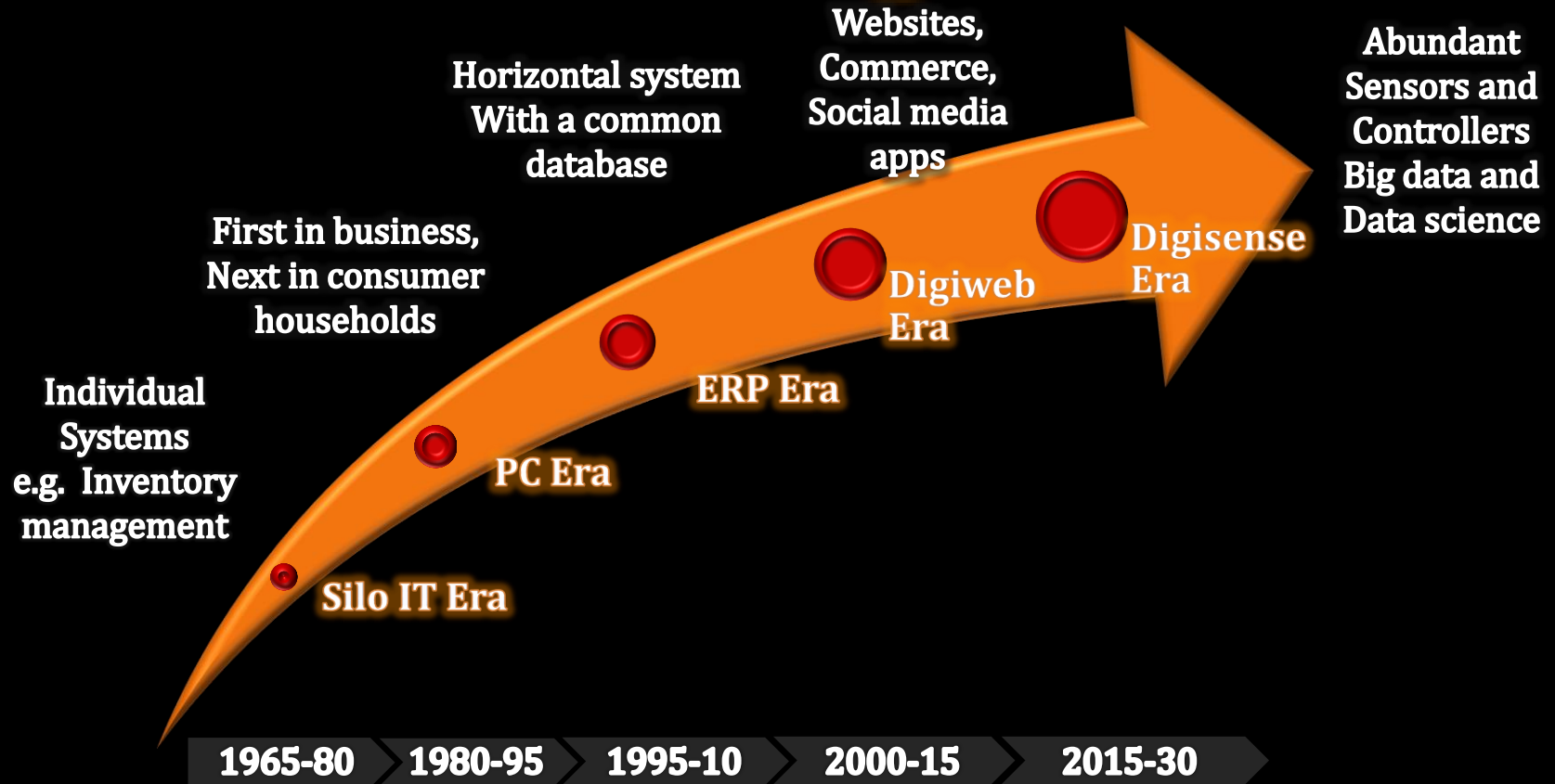
Candy sugar

# Agenda

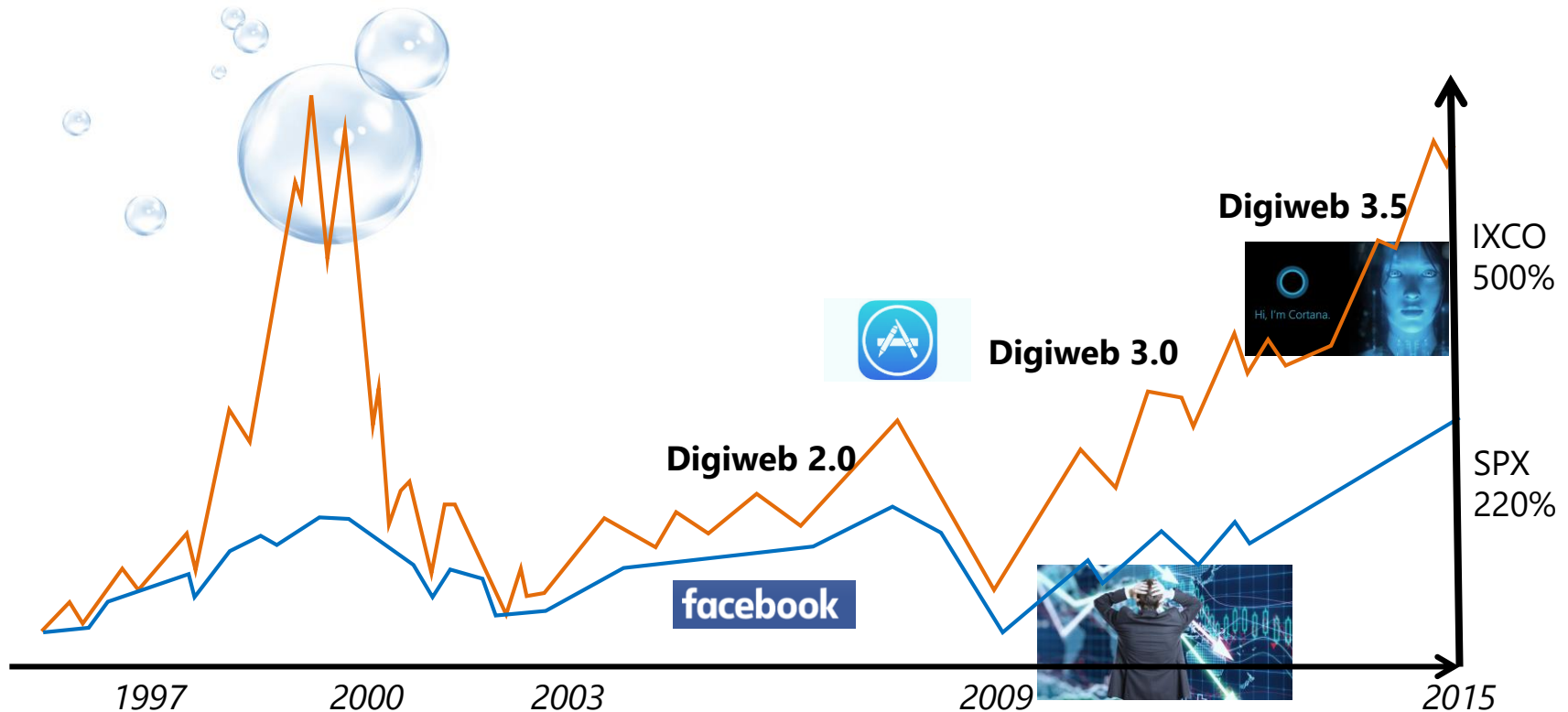
- What is digitalisation really?
- Digiweb disruptions
- Digisense disruptions
- Digital strategy
- Digital (agile) innovation
- Digital architecture
- Conclusions, questions



# The 5 Eras of Digitalization



# DigiWeb has created superior shareholder value – and now DigiSense will take this even further



# HISTORIC TECHNOLOGY DISRUPTIONS – FIRE, STONE, METALS, STEAM, COMBUSTION, ELECTRICITY

Hunter-gatherers struggle to survive in small family groups – fire and stone is a true turning point



**ACCESS TO PREY**



**ACCESS TO LAND**

Agricultural workers can afford to develop craftsmanship and warfare



**ACCESS TO CAPITAL**

Industrial age workers boost productivity – highly specialized educations and work

Information age workers boost productivity through analysis and decisions



**ACCESS TO INFORMATION**

Sorry for skipping the evolution of science, that's saved for later 😊

# Book stores

Are generally turning digital, even the content is turning digital. Downloads of digital books to tablets is an increasing segment of the book consumption market and may eventually kill the volume of paper editions.

Amazon.com according to Forbes (2014):

\$5.25 billion: Amazon's current annual revenue from book sales, according to one of Packer's sources. That means books account for 7% of the company's \$75 billion in total yearly revenue.

19.5%: The proportion of all books sold in the U.S. that are Kindle titles. E-books now make up around 30% of all book sales, and Amazon has a 65% share within that category, with Apple AAPL +0.03% and Barnes & Noble NE +2.21% accounting for most of the balance.\*

>50%: The decrease in the number of independent bookstores over the past 20 years. There used to be about 4,000 in the U.S.; now there are fewer than 2,000. Amazon's arrival on the scene is only part of the story here, of course; the decline of the indies started with the debut of big-box stores like B&N and Borders.

## Barnes & Nobles



## Niche shops



## Amazon warehouse



## E-books



# News media

Traditional news media are fence sitting and offering both digital and paper based content to most customers.

Next step is to hand over the savings on print and logistics to the consumer and sell digital news only.

The contenders will be truly digital, presenting an asset-light and extremely fast newsfeed to the world.

Some will be extremely niche – e.g. a music festival lasting for a week.

The challenge is to match convenience and prices and secondly, to access consumers through their preferred social media channels.

Evening News Audience Continues a 30-Year Decline  
November-to-November Average Viewers per Night  
in Millions



Source: Nielsen Media Research, used under license  
PEW RESEARCH CENTER'S PROJECT FOR EXCELLENCE IN JOURNALISM  
2011 STATE OF THE NEWS MEDIA



The image shows two overlapping digital interfaces. The top one is the homepage of The Wall Street Journal, Europe Edition, featuring a navigation menu and a headline about U.S. unemployment falling to 6.1%. The bottom one is a Facebook event page for Roskilde Festival, displaying a detailed lineup of bands for Thursday through Sunday, including The Rolling Stones, Arctic Monkeys, and many others.

# Banking

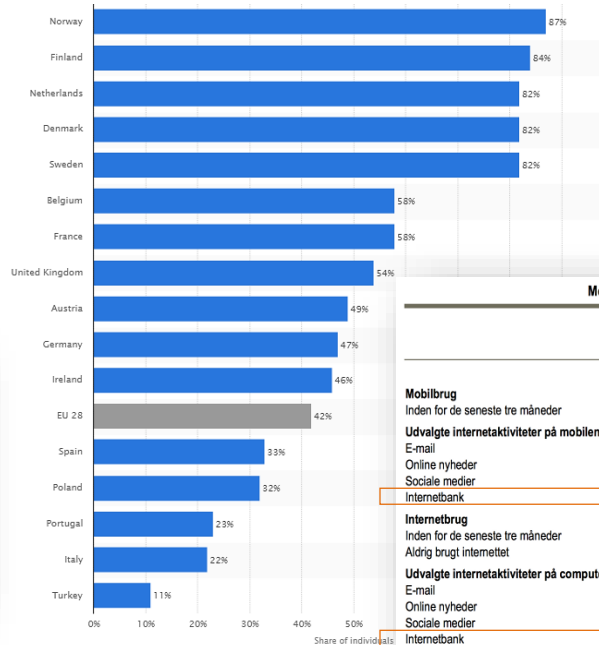
Today 98% of all bank transactions are done through internet banking services. The traditional branch office of your bank looks dramatically different from what it was just 2 decades ago. You typically visit your branch every 2nd year, but your internet bank weekly. Mobile banking is on the rise in younger segments.



Every 2nd branch closed since 1990

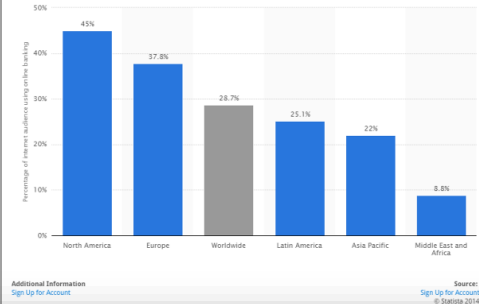
## Online banking penetration in leading European markets in 2013

This statistic shows the online banking penetration in European countries in 2013. It was found 87 percent of the Norwegian population access online banking sites, making Norway the country with the strongest internet banking penetration in Europe.



## Global online banking penetration in April 2012, by region

This statistic shows the global online banking penetration as of April 2012, by world region. Globally, 423.5 million people accessed online banking sites during April 2012, reaching 28.7 percent of the internet audience. In North America, 45 percent of internet audiences accessed banking sites.



## Mobilbrug og Internetbrug, 2014

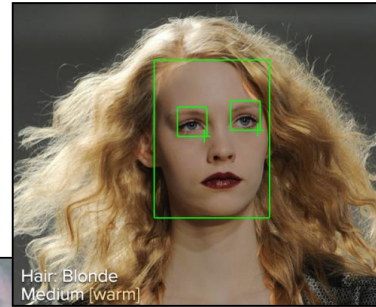
	Alder								Køn	
	I alt								Mænd	Kvinder
	16-24 år	25-34 år	35-44 år	45-54 år	55-64 år	65-74 år	75-89 år	pct. af befolkningen 16-89 år		
<b>Mobilbrug</b>										
Inden for de seneste tre måneder	90	97	95	94	91	89	85	67	90	90
<b>Udvalgte internetaktiviteter på mobilen</b>										
E-mail	55	74	79	72	61	42	28	8	56	55
Online nyheder	46	58	67	62	54	34	21	6	50	43
Sociale medier	49	82	80	62	49	28	14	3	47	50
Internetbank	33	56	57	43	30	16	9	2	36	29
<b>Internetbrug</b>										
Inden for de seneste tre måneder	93	100	100	99	97	94	84	55	94	92
Aldrig brugt internettet	6	0	0	0	1	3	12	41	5	7
<b>Udvalgte internetaktiviteter på computeren</b>										
E-mail	86	94	95	94	93	86	76	43	87	85
Online nyheder	68	73	80	77	75	65	56	29	72	64
Sociale medier	62	94	89	73	64	49	29	10	60	63
Internetbank	80	84	93	90	86	80	71	38	81	80

# **DIGISENSE**

- **DIGITAL WEAR**
- **BIOMETRICS and IN-BODY DEVICES**
- **ENTERTAINMENT**
- **AUGMENTATION**
- **UTILITY CONTROL**
- **ENVIRONMENTAL CONTROL**
- **SOCIAL RELATIONS**
- **SELF REALIZATION**
- **CONVENIENCE**
- **ROBOTICS**
- **INFOMEDIARIES**
- **MARKETING MADE PERSONAL**
- **MICRO PAYMENTS**
- **MESH INFRASTRUCTURES**
- **DIGITAL PRINT MANUFACTURING**

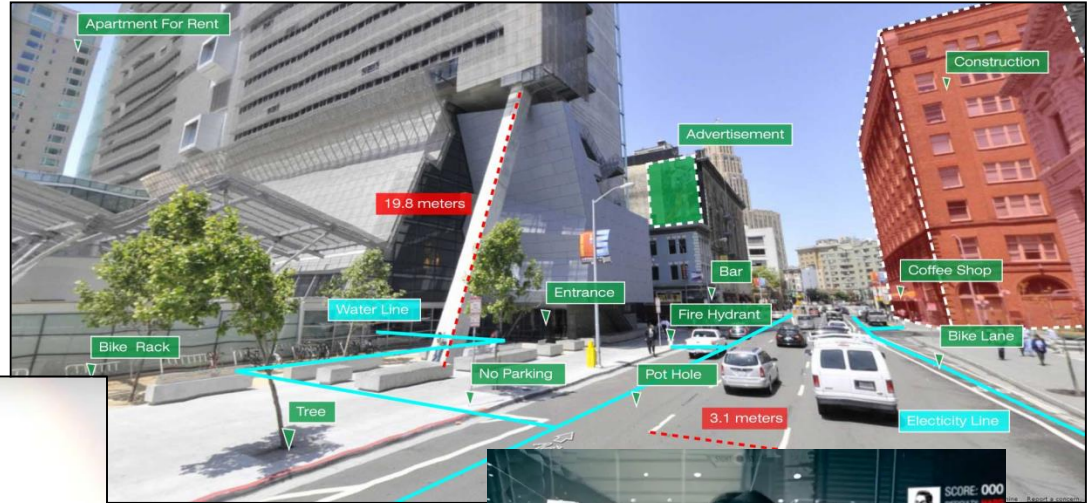
# Targeted advertising & personalized marketing

Based on personal preferences,  
based on geography (location  
aware) Recognized when your  
digital signature arrives



# Augmentation

Tourist guide, navigation screens, manuals for home appliances, sports, cooking books check in assistance, in-store locators, airline logistics



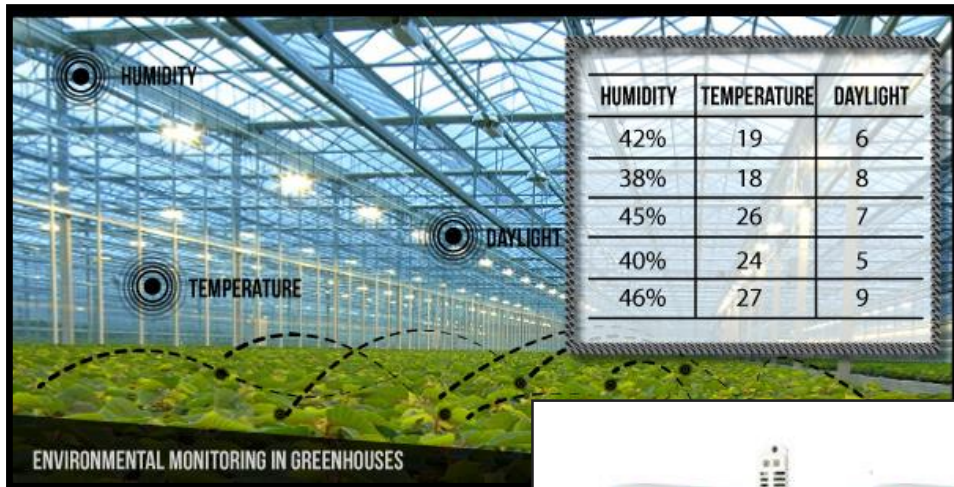
# Utility Control

Heat, food, cooling,  
cleaning, washing,  
drones (surveillance,  
packet delivery, pizza  
delivery, inspection of  
non-accessible things)



# Environmental Control

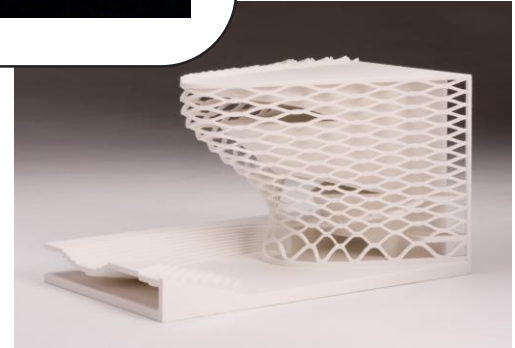
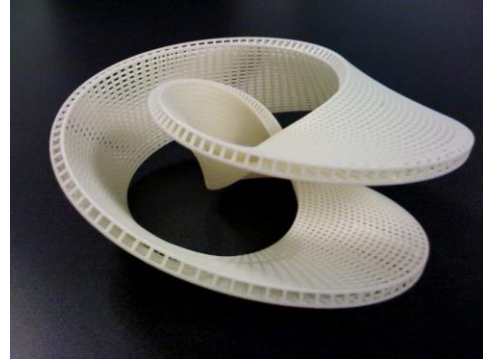
Emissions, heat, electricity, water, alarms, track cam, theft, security, fire, gas, waste - trash metering



# Digital Print Manufacturing

Fine-grid manufacturing technology based on new ink injection techniques can be used for low-volume, individualized manufacturing.

First and last batch has same product cost and set-up time is little or none. Spare parts time-to-market, R&D visualization, scale through massively parallel set-ups instead of monolithic manufacturing setups.





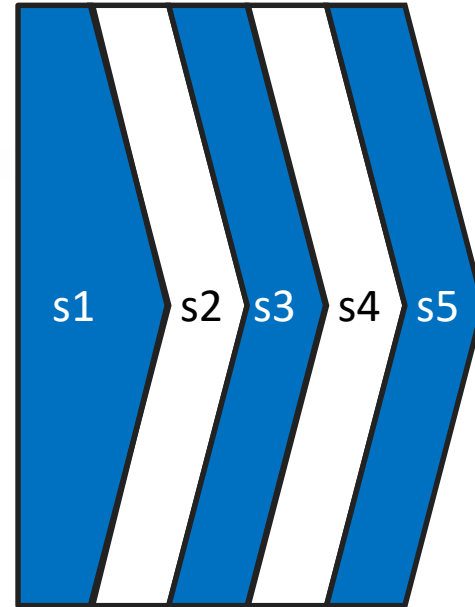
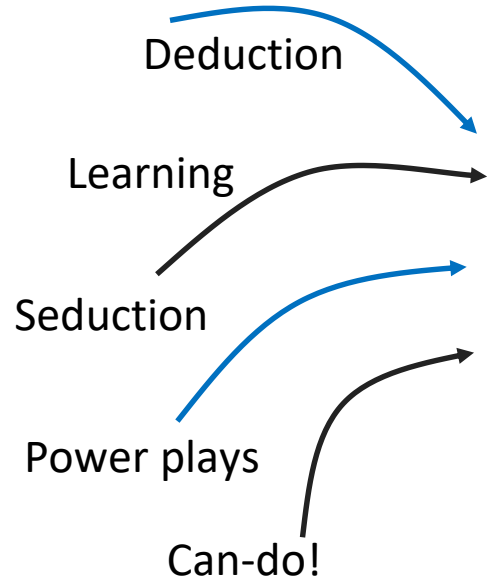
# The *what* and *how* of digital strategy and architecture

## "Schools"

## Innovation portfolio

## Portfolio management

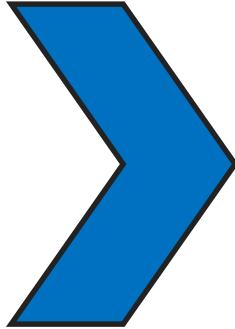
## Outcomes






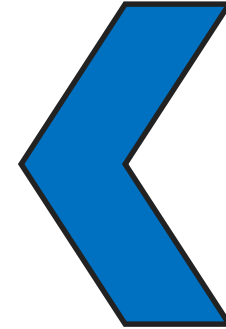
Culture

# Digital Innovation – Creating a thick pipeline of digital business ideas

*Disruptive technology*



Agile business innovation	
	
Innovation sprints Shark tanks Key takeaways from the Inferno	



*Digital Architecture  
best practices*

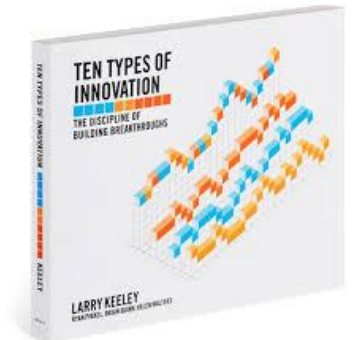
# The Strategic Designer is your new Best Buddy

- Background often as industrial designers
- Specialising in service and product designs
- Catching up on digital – especially on UX and device design
- Their key delivery is the value proposition
- Iteratively defined in close cooperation with representative customers

## TEN TYPES OF INNOVATION

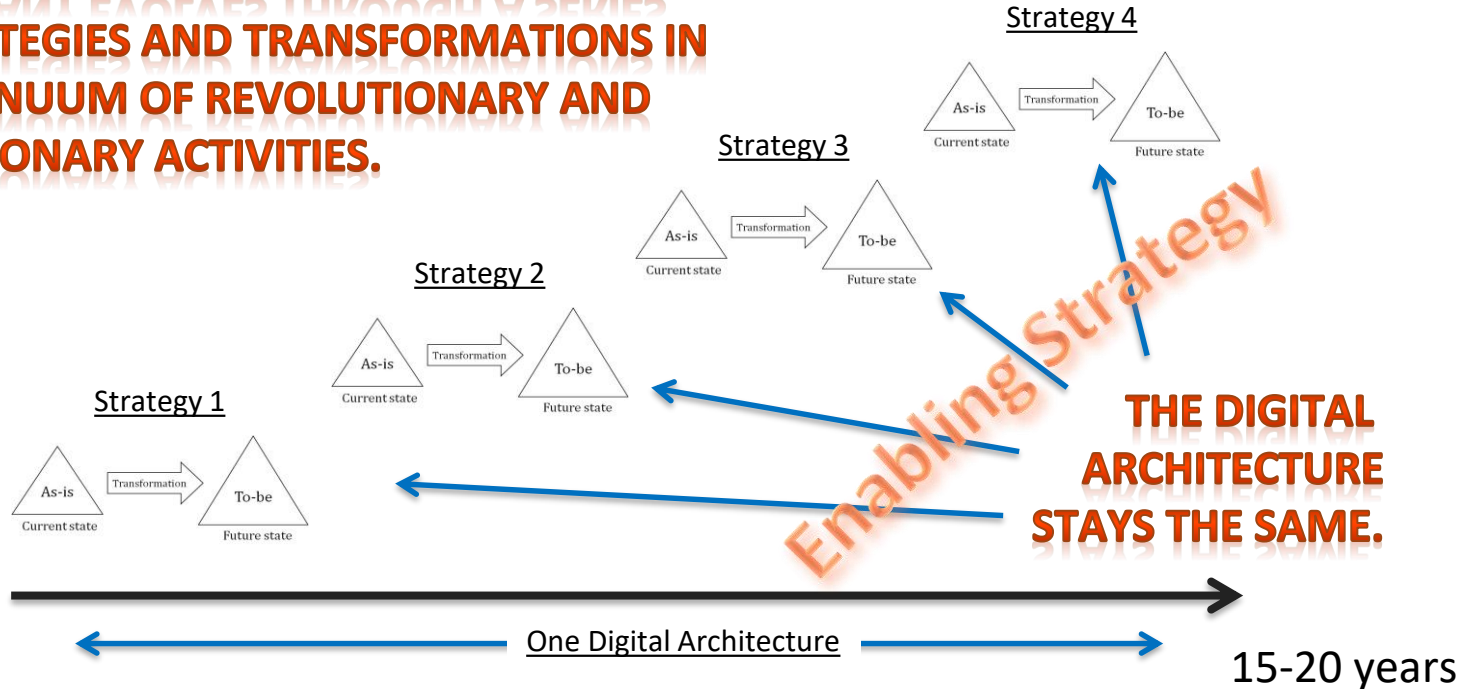


THE DISCIPLINE OF  
BUILDING BREAKTHROUGHS



# Why Digital Architecture is the "Mother" of Strategy

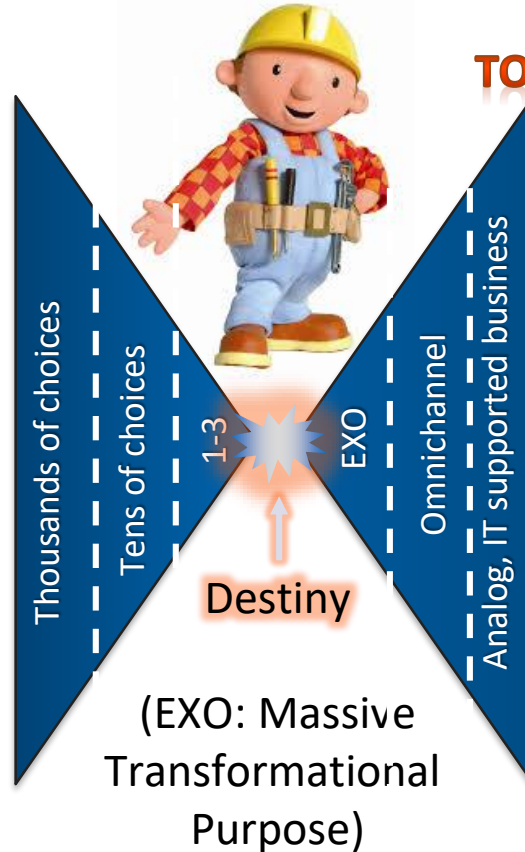
**A COMPANY EVOLVES THROUGH A SERIES OF STRATEGIES AND TRANSFORMATIONS IN A CONTINUUM OF REVOLUTIONARY AND EVOLUTIONARY ACTIVITIES.**



# IT cannot be done without the Digital Architect

## DRIVERS:

- Integration
- Standardization
- Longevity
- Scalability
- Stability
- Diversity
- Collaborated
- Geography
- Competition
- Security
- Sustainability



## TOMORROW'S ENTERPRISE:

*Tomorrow's enterprise is a loosely knit system of processes, people, resources, goals and plans.*

*It will be dynamic and flexible and contain as few or many internal and external parties as required to maximize value and return on capital employed.*

*The enterprise owns its value proposition and it claims access to the customer – all other activities are considered non-core.*

*Focus is on the critical dimensions: customers, products, geography, time, strategic business units and function measuring effort, cost, revenue, profit and capital.*

*The core capability is extra-enterprise integration and collaboration.*

# What you (at least) need to prepare for...

- the diminishing size & value of business transaction and the consequential transaction volume explosion
- the use of internet-worked transactions in almost all business-to-business engagements and as customer/consumer touchpoints
- the high content of digital services (apps, clouds and IOT) in most value delivery
- the increasing extent of out-tasking and outsourcing in all enterprises (EXO)
- the increasing extent of international business (EXO, globalization)
- the extreme focus on capital utilization and its returns (primal capitalism)
- the shortening time from achievement of competitive advantage until it becomes competitive parity (free access to information in an internetworked society)
- the increasing education and capability levels of employees - and the inevitable delegation of decisions
- the transformation to AI in repetitive processes (aka. Bots, robots, machine learning etc)