

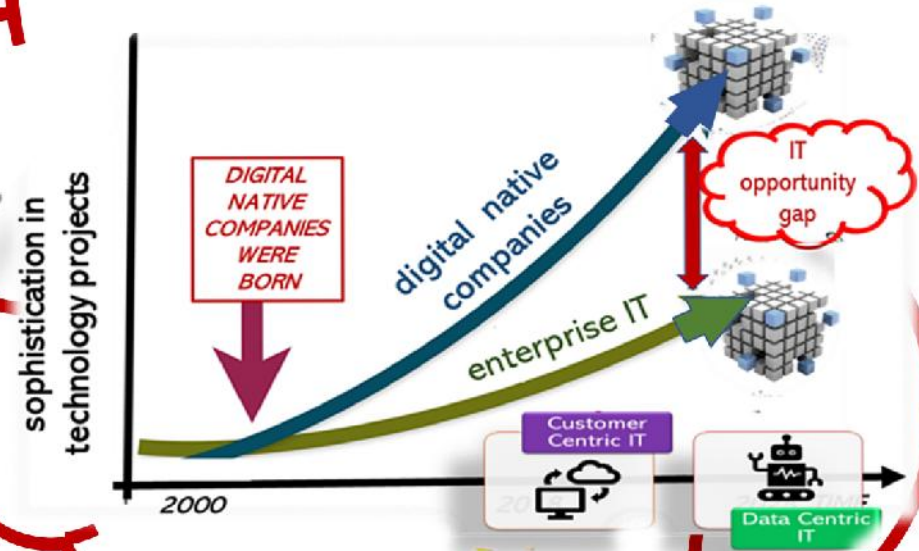


RE-IMAGINING THE FUTURE

Innovation Initiative
adapt, disrupt, transform

Dr Jimmy Schwarzkopf
jimmy@stki.info

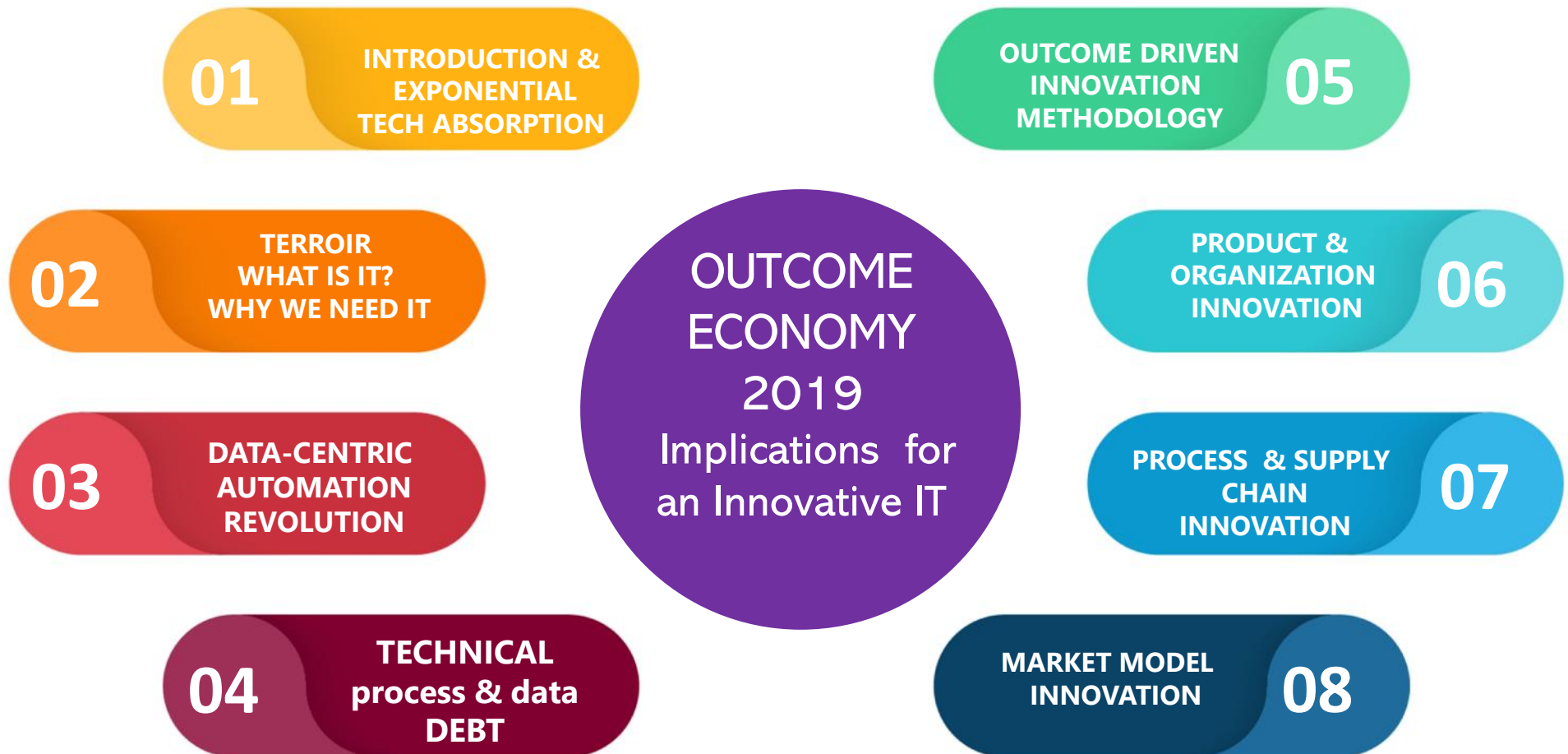
Innovation Initiative adapt, disrupt, transform



STKI
Summit
2019

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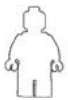
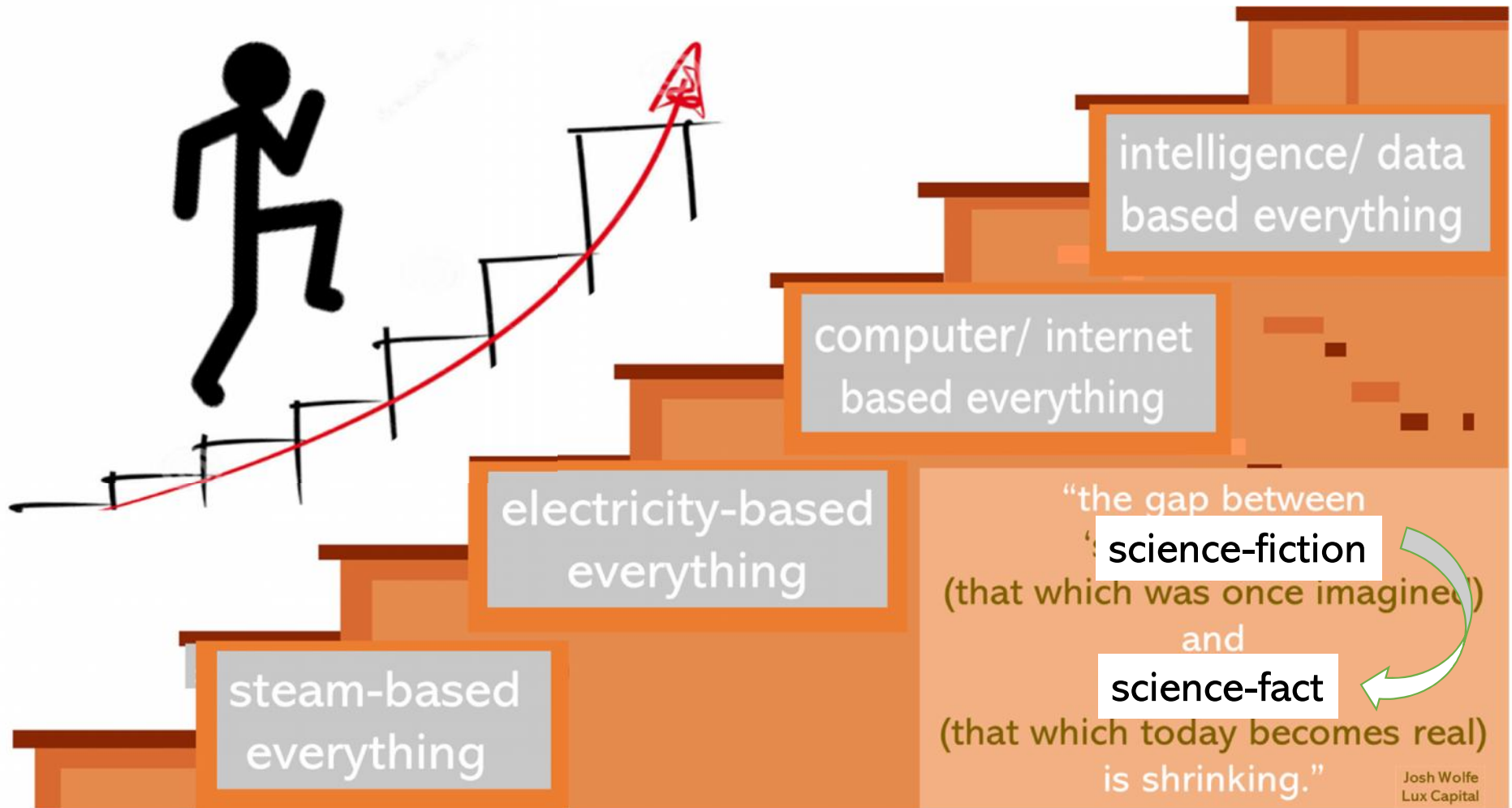


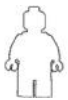
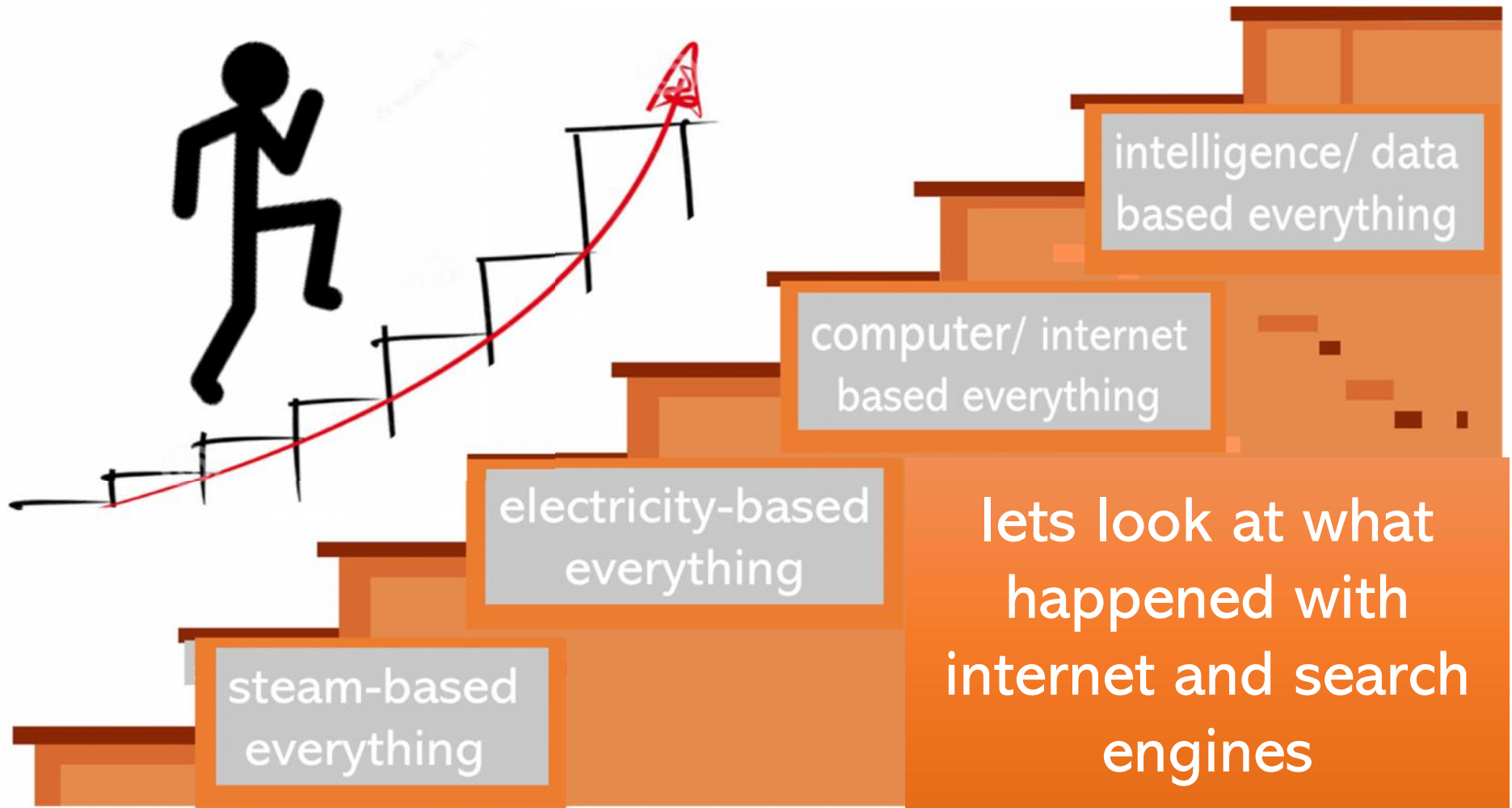


What is *exponential* growth?

Can we *understand* it?

How can we catch up?

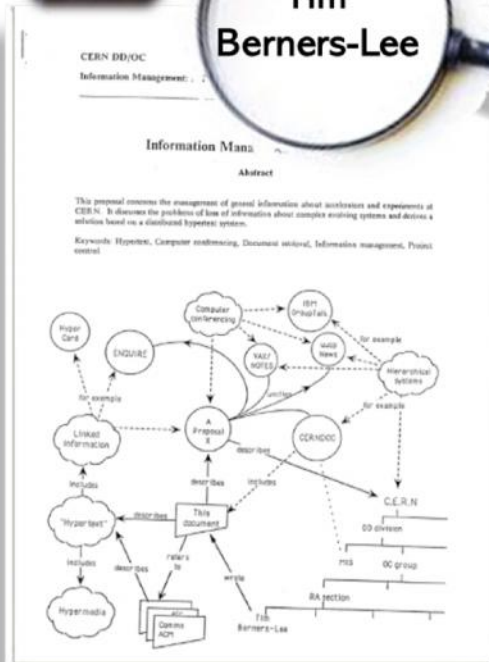




example of exponential growth

30 years ago, on March 12, 1989

proposal to help CERN manage and share information
that would later become known as the World Wide Web or Internet



DATE	NUMBER OF USERS	% WORLD POPULATION
December, 1995	16 millions	0.4 %
December, 1996	36 millions	0.9 %
December, 1997	70 millions	1.7 %
December, 1998	147 millions	3.6 %
December, 1999	248 millions	4.1 %
years of exponential growth		
June. 2017	3,885 millions	51.7 %
Dec 2017	4,156 millions	54.4 %
Jun 2018	4,208 millions	55.1 %

This is what happens in an
INTERNET MINUTE

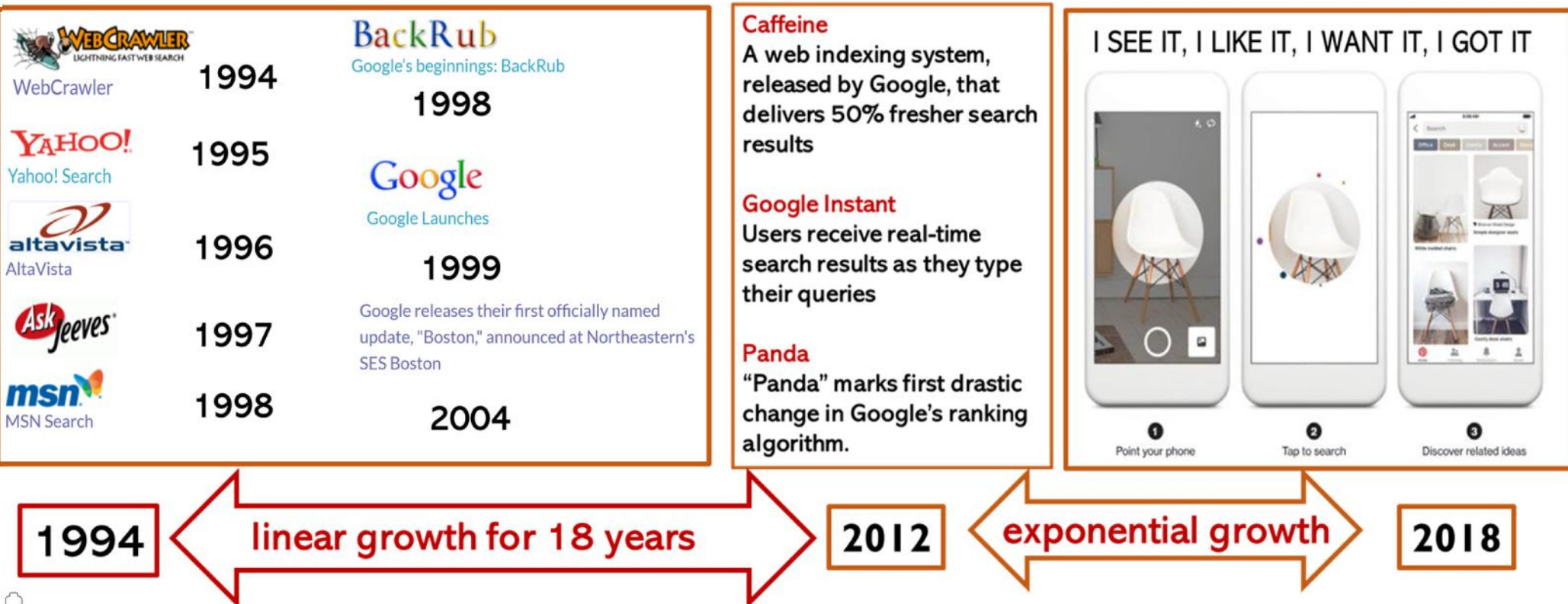
NETFLIX 266,000
hours watched
2018 minute

NETFLIX 695,000
hours watched
2019 minute



Search Engines 25-year history

1994 2019



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rate of change in any evolutionary system that
learns via trial and error over time increases **exponentially**

technology changes “**exponentially**”
when the power or speed **doubles each year**
or the cost **drops by half**

humans tend to **overestimate** the short term
but **underestimate** the long term

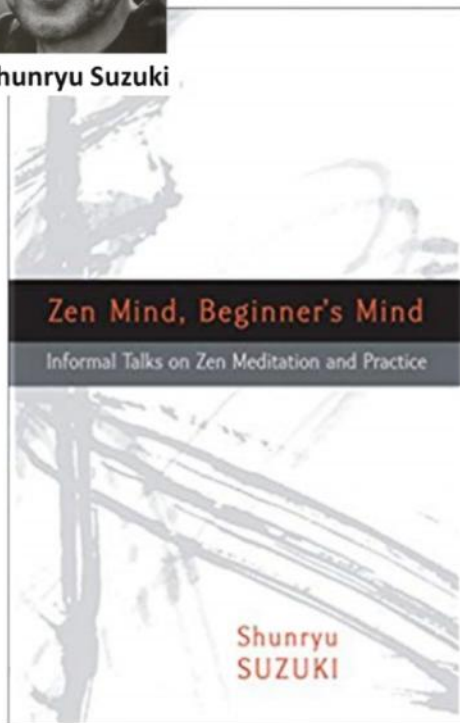
**humans are not equipped to process
exponential growth**

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"In the beginner's mind there are many possibilities,
but in the expert's there are few."



Shunryu Suzuki



Shoshin (初心)

the Zen term for beginner's mind
meaning we are free from previous views and opinions.

BEGINNER'S MINDSET having an attitude of openness, eagerness, and lack of preconceptions when studying a subject.

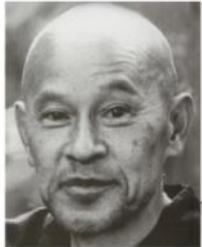
EXPERT's MINDSET reliance on knowledge gained from past successes that hinders the open mind needed to uncover radical new ways of doing things.

EXPERT's DILEMMA: risk being trapped by their expertise into retracing old routes over and over, seeking assurance in what has worked in the past or for others.

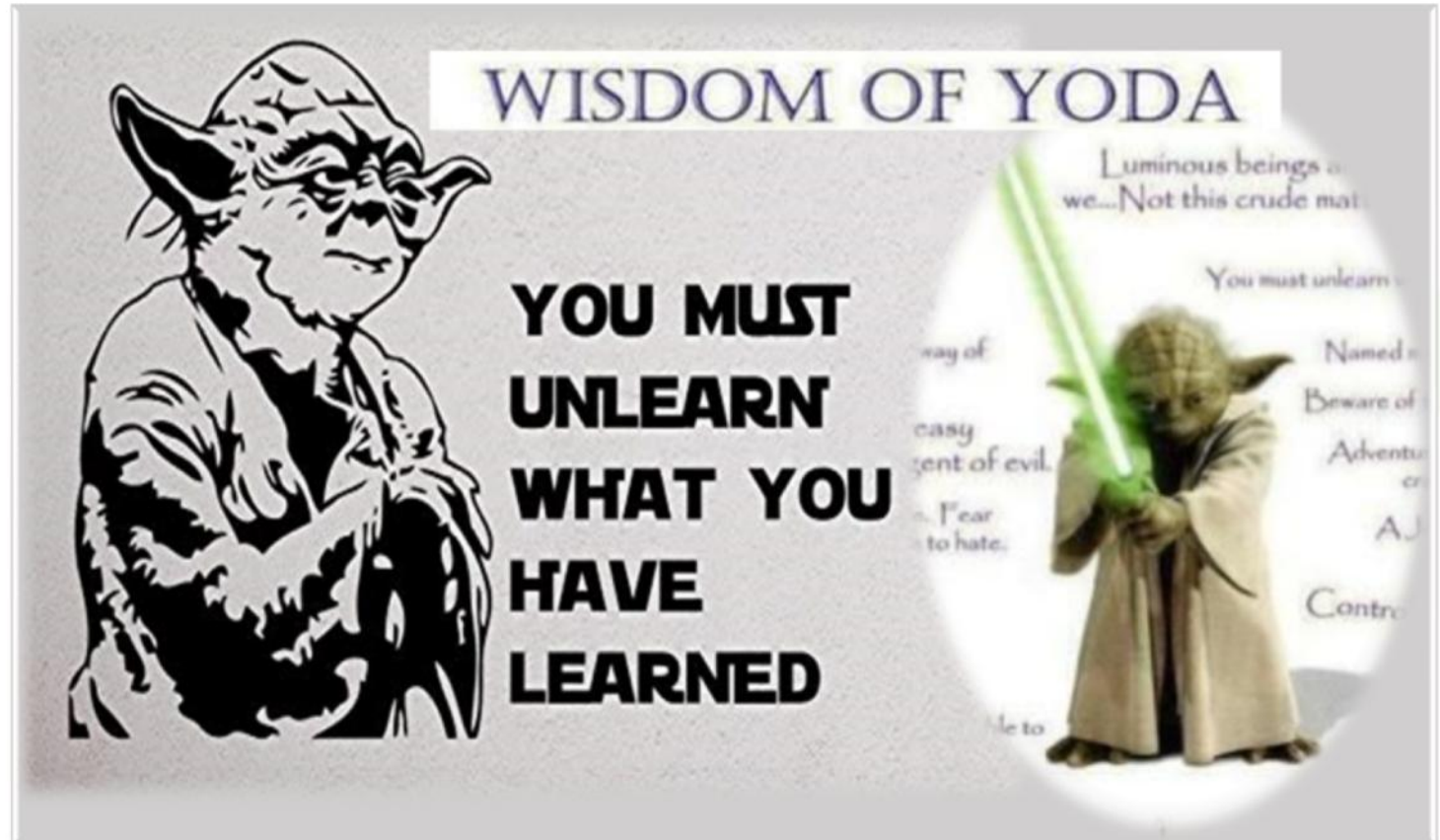
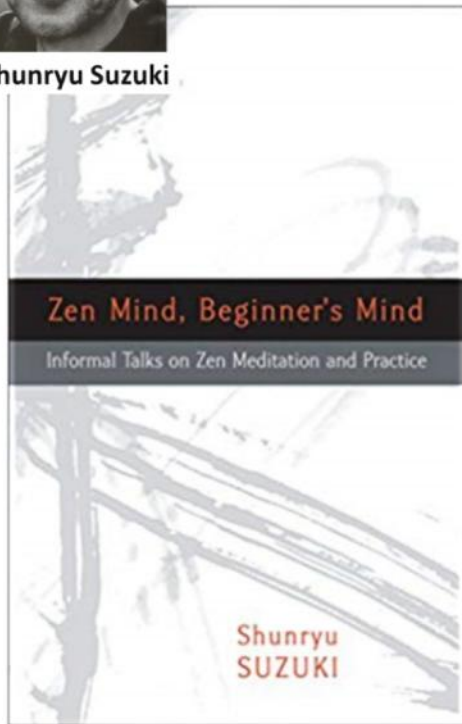




"In the beginner's mind there are many possibilities,
but in the expert's there are few."

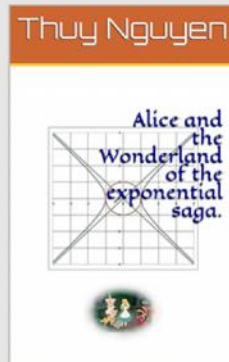
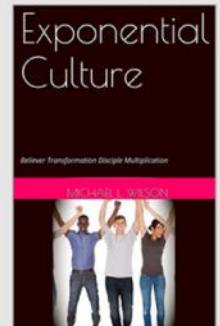
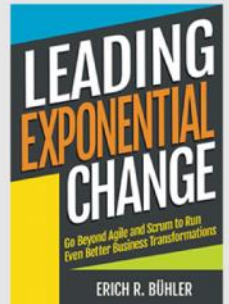
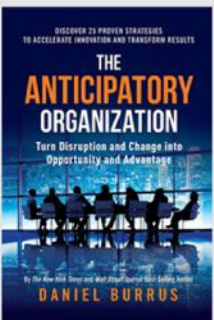
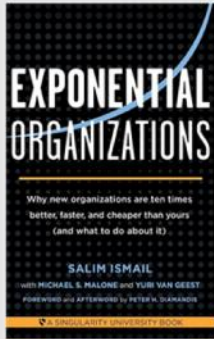


Shunryu Suzuki

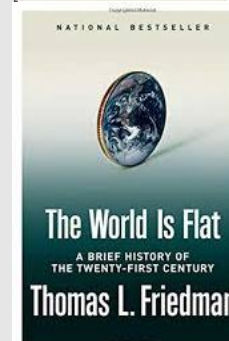
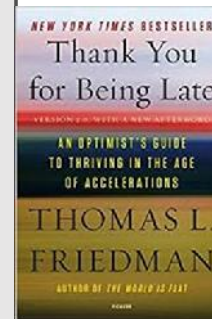
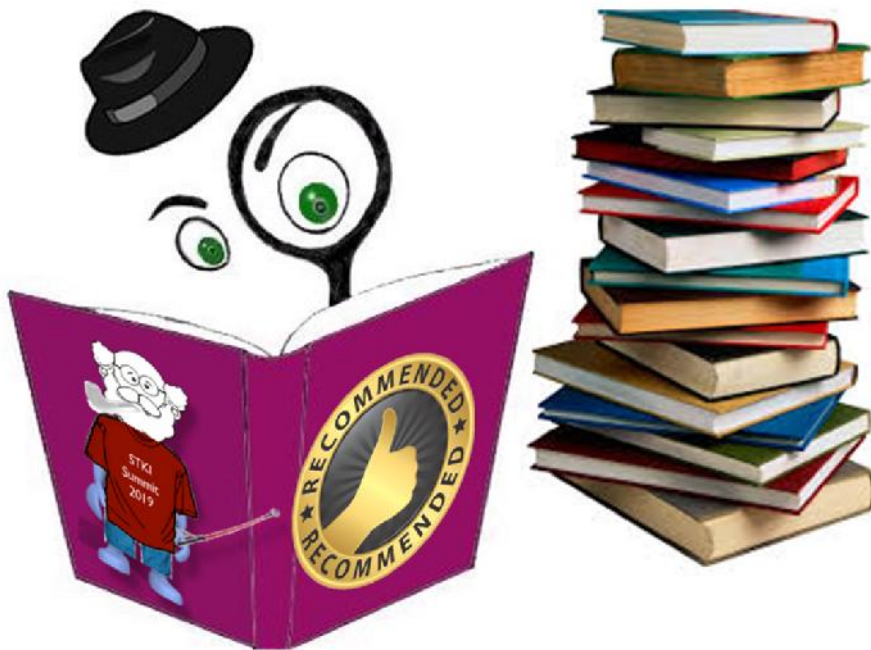


2017-2018

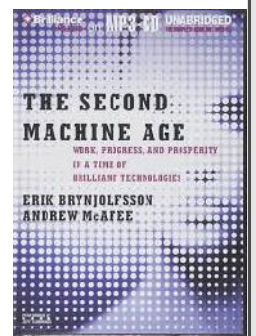
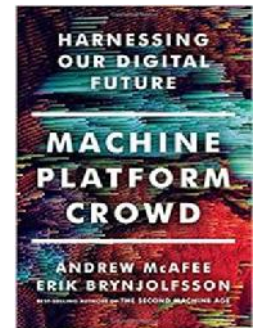
record years for books and new editions
for theories about how we can
understand and flourish in this
exponential world with robots, artificial
intelligence and new business models



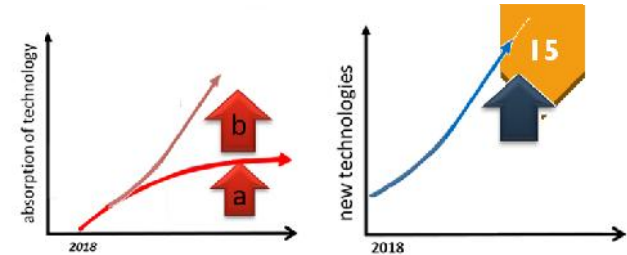
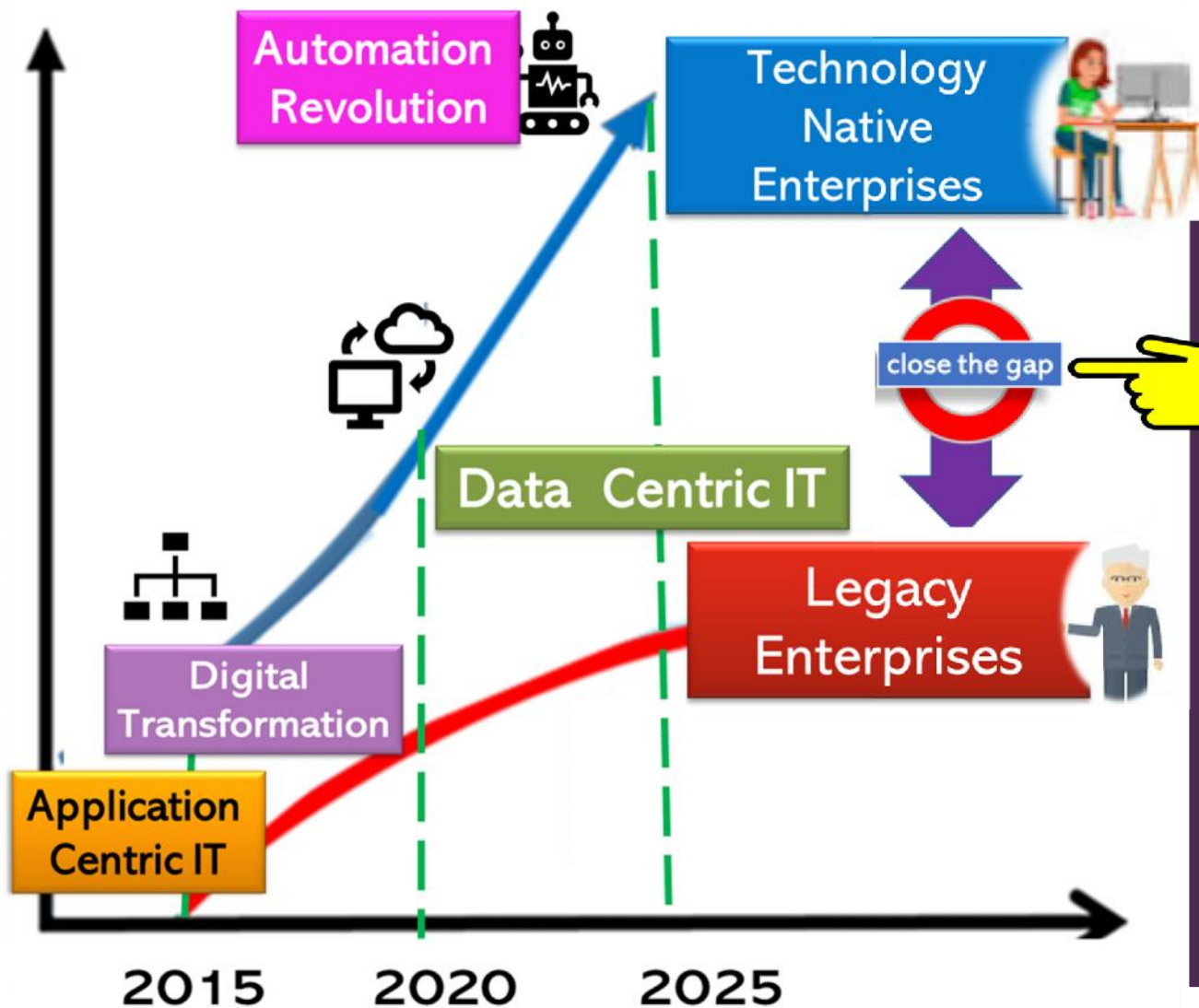
2019 Recommended Reading List



authors that changed
their mind about
their first book



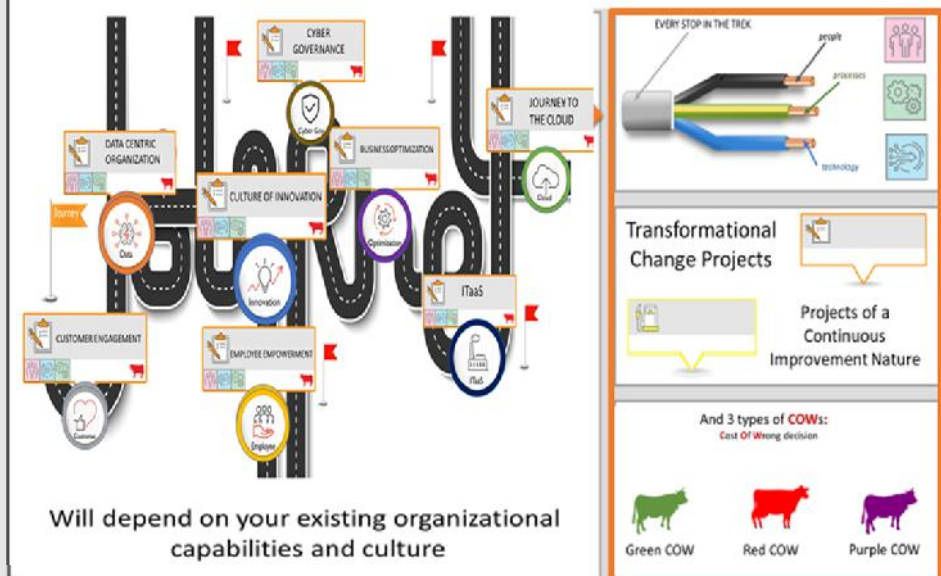
ABSORPTION OF NEW TECHNOLOGIES



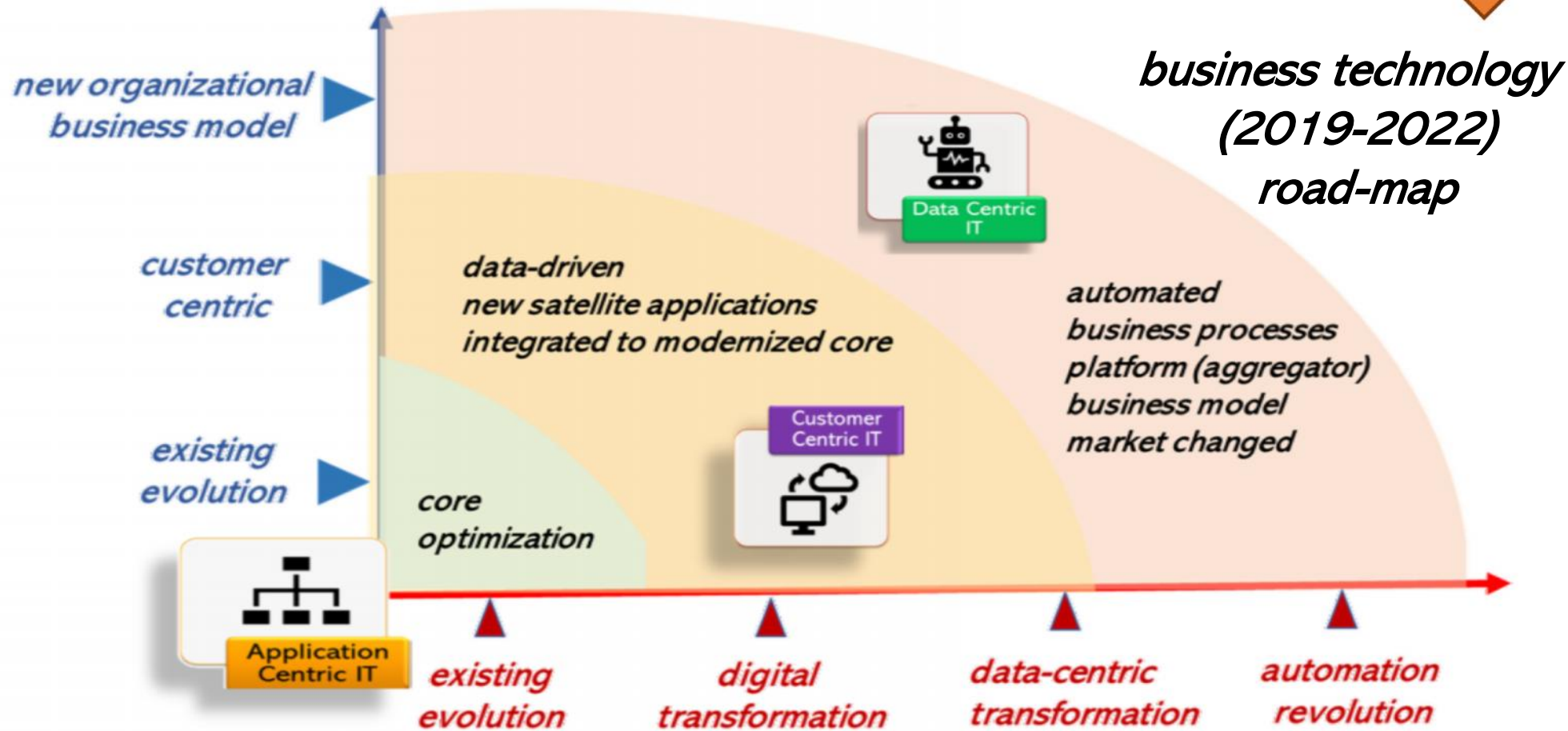
STKI Summit 2019
all about figuring out the
IT Opportunity Gap

“The question is not how fast tech companies will become your competitor, but how fast you will become a tech company.”

STKI Summit 2018
preparations gave us a
good sense of what the
future of IT would be.



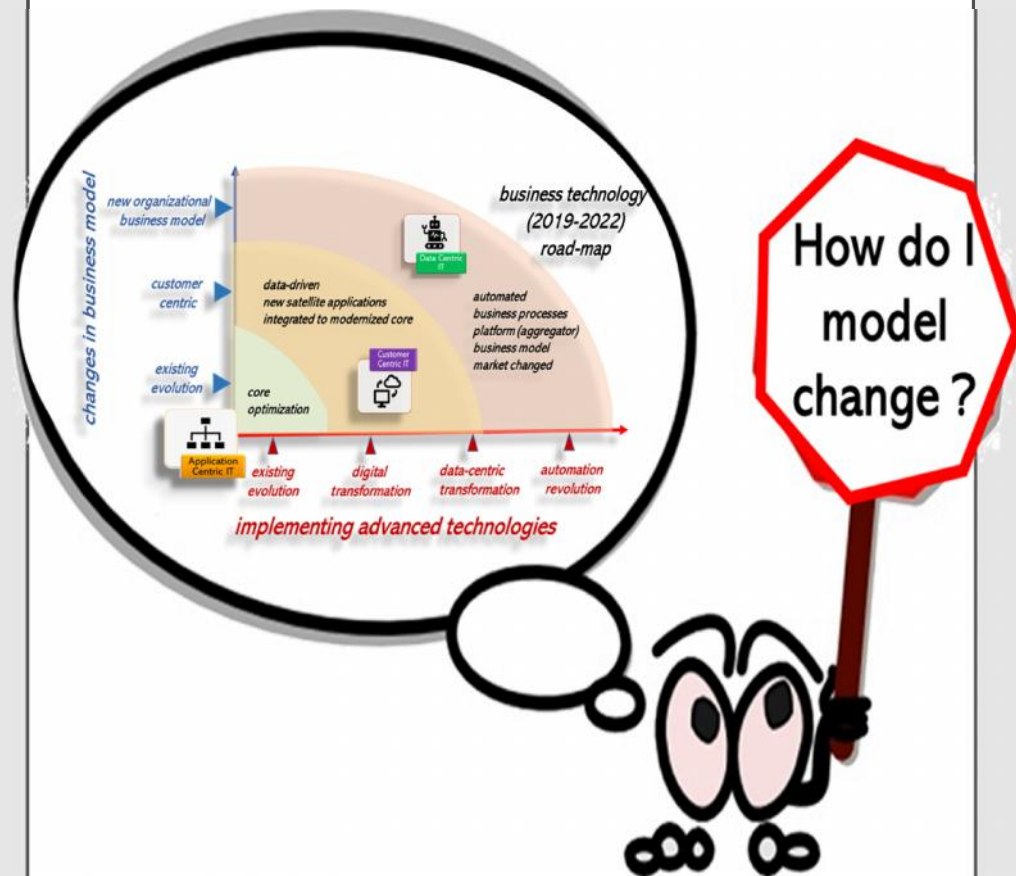
changes in business model



implementing advanced technologies

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we needed a
new framework
 to describe
rapid organizational
change and the initiatives
needed for the next
 (preemptive)
 transformation
“automation revolution”



TERROIR



Terroir is also about the **traditions** passed to younger professionals about the **skills** required in making a special product, the **recipes** and the special **ingredients** used.

Where's the beef... from? Why terroir matters for more than wine

Western cattle eat more barley, Ontario cattle eat a lot of corn, affecting taste says prof

Tackling Terroir in Chocolate

May 10, 2017 Extension, Final Multimedia Essay chocolate, nraanir terroir 2017a202

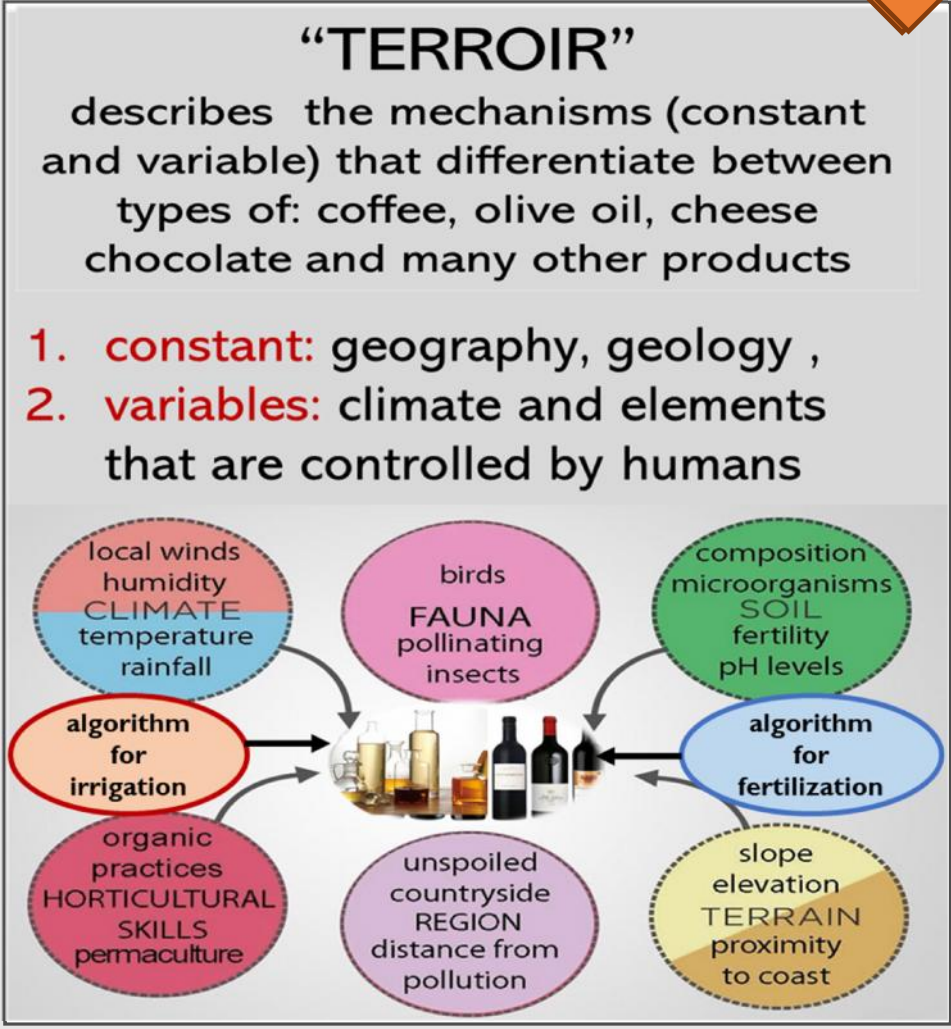
Olive Oil Times Olive Oil World -
What is olive oil terroir?

TERROIR

What Defines a Coffee's Terroir?

Country of origin is just the beginning.

TERROIR - WHAT DOES IT MEAN AND HOW DOES IT AFFECT YOUR CHEESEMAKING?



מא 1 delete comma

20-Mar-19-משתמש אורח,

A company's ideal behavioral strengths are unique, and cannot be imitated this is called

corporate DNA

unique deeply embedded emotions, perspectives and habits that have built up through many years

Corporate DNA factors can't be separated from one another.

The behaviors and emotions that should be emphasized in one company may be precisely those that would hold another company back.



SOCIOLOGICAL PARADIGMS
and ORGANISATIONAL
ANALYSIS

Gareth Morgan
IMAGES OF
ORGANIZATION



Updated Edition of the International Bestseller

A company's ideal behavioral strengths are unique, and cannot be imitated this is called

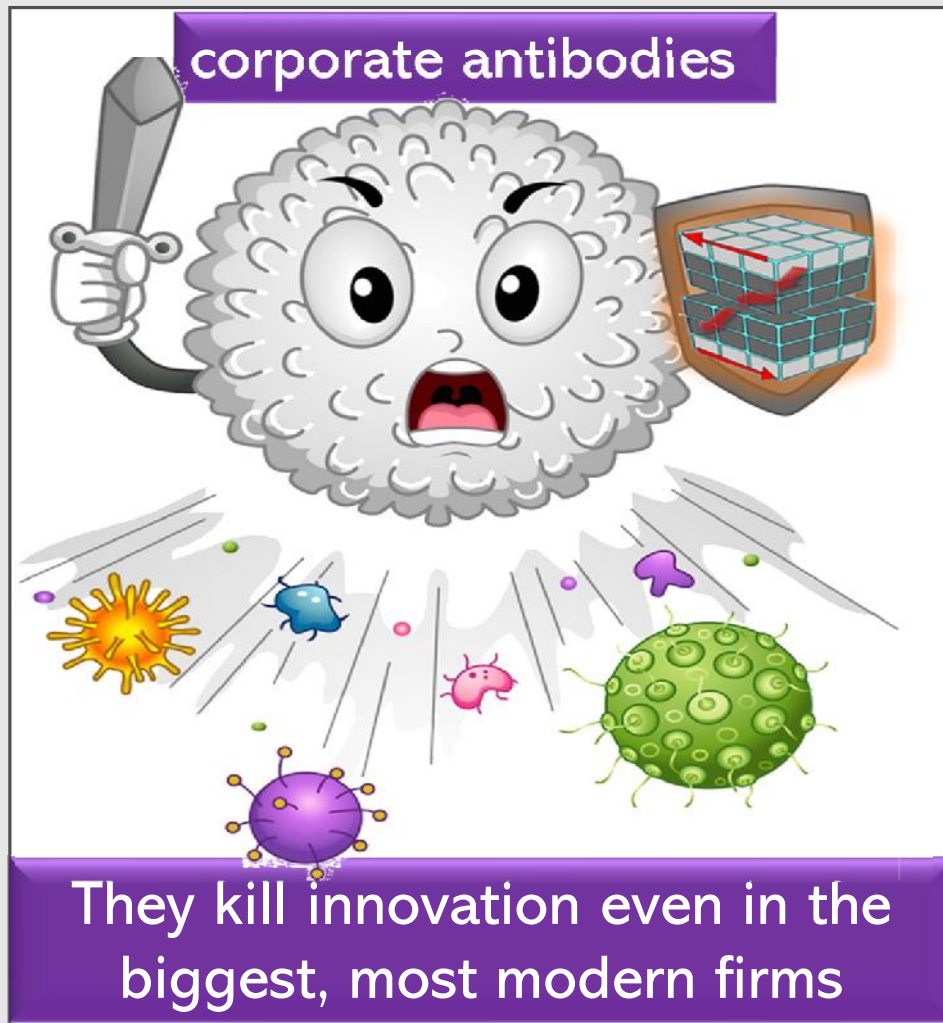
corporate DNA

unique deeply embedded emotions, perspectives and habits that have built up through many years

can corporate DNA
change?

The behaviors and emotions that should be emphasized in one company may be precisely those that would hold another company back.





Organizational culture doesn't embrace change WHY?

The answer is
 “corporate antibodies”
 (people and processes)

They extinguish a new idea as soon as it begins

When they attack an idea, it's because they perceive that idea to be a foreign object trying to harm their stability in the organization.





Organizational culture doesn't embrace change WHY?

The answer is
"corporate antibodies"

organizations have no choice but to change
because of exponential technologies



When they attack an idea,
it's because they perceive that
idea to be a foreign object trying
to harm their stability in the
organization.



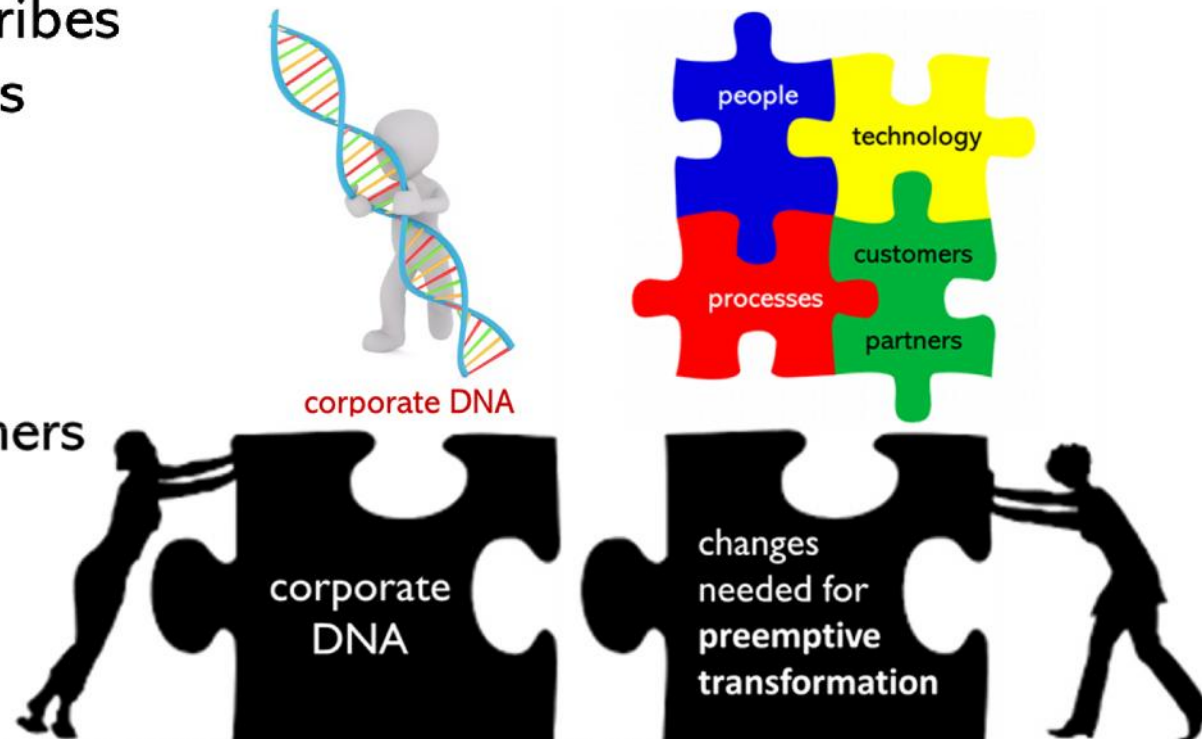
ORGANIZATIONAL TERROIR

(TERROIR works also for organizations)

outlines a mechanism that describes what can change and what is constant in an organization

1. **organizational DNA** (constant)
2. **execution variables** (people, technology, processes, customers and partners)

speed of an idea is fast,
speed of technology is fast,
but the speed of organizations is slow.



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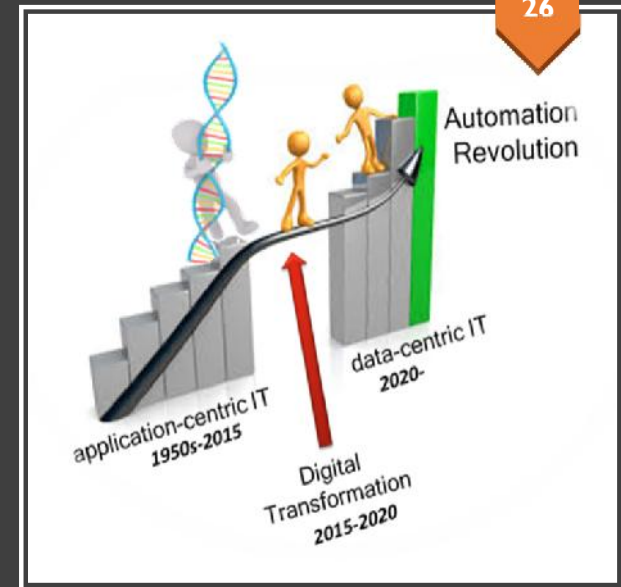
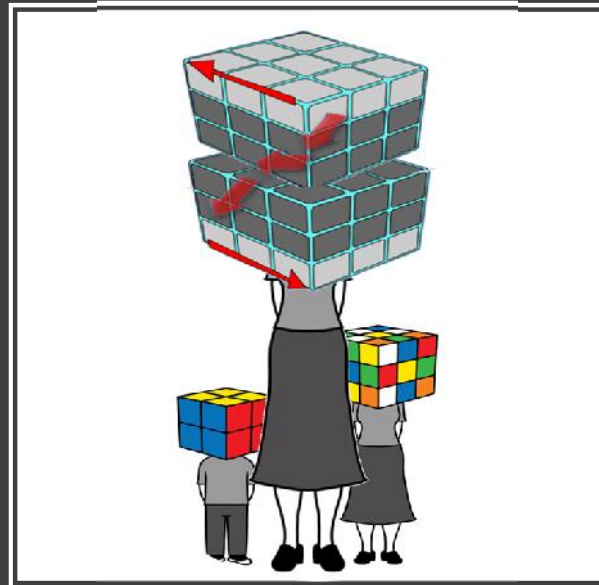
because of the
company's TERROIR
(DNA and variables)

“values of IT services”

for that company are unique

-“incapable of being
reproduced “-

even if the technologies,
methodologies and strategies
are painstakingly duplicated”-



every company has its
own “terroir”

change comes differently to every company

*organizational TERROIR **does change***
- "reactively and proactively" -



thrown to you after
you're drowning

Reactive (forced)

Reacting to market/competition rather than anticipating the future. Making decisions fast and without the infrastructures / talent needed.



helps protect you
from drowning

Proactive (preemptive)

Acting before a situation becomes a source of confrontation or crisis. Preparing strategies, methodologies, talent and infrastructures

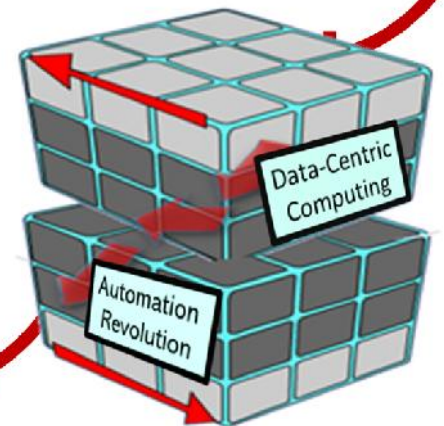




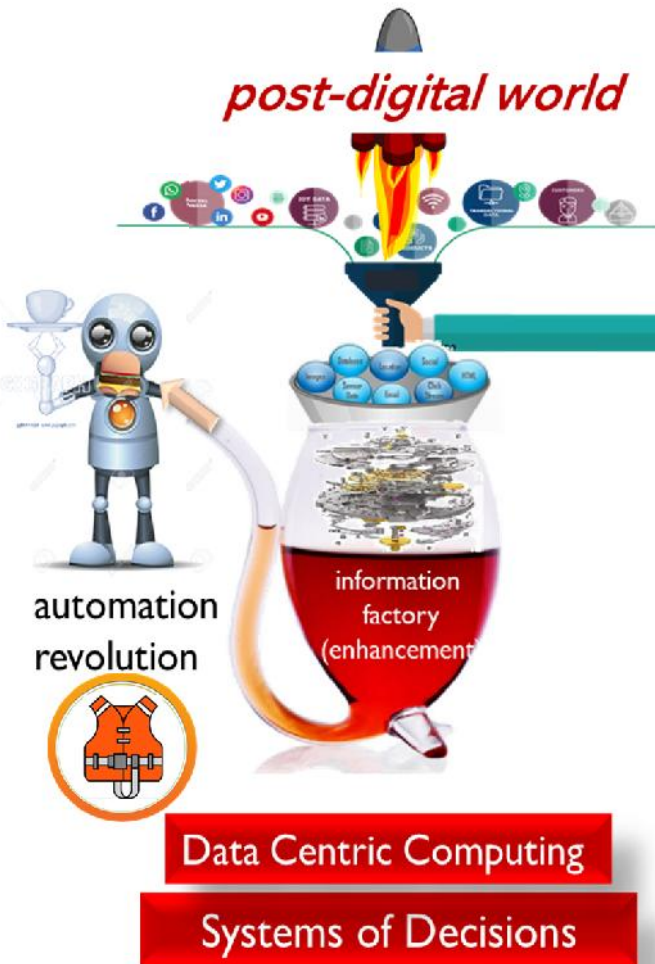
can IT prepare itself for
the next transformation?

what must be done for
data-centricity? ?

what do we mean
“automated to
autonomous”?



post-digital world





DIGITAL TRANSFORMATION “forced” transformation (2015-2020)

transformation from:

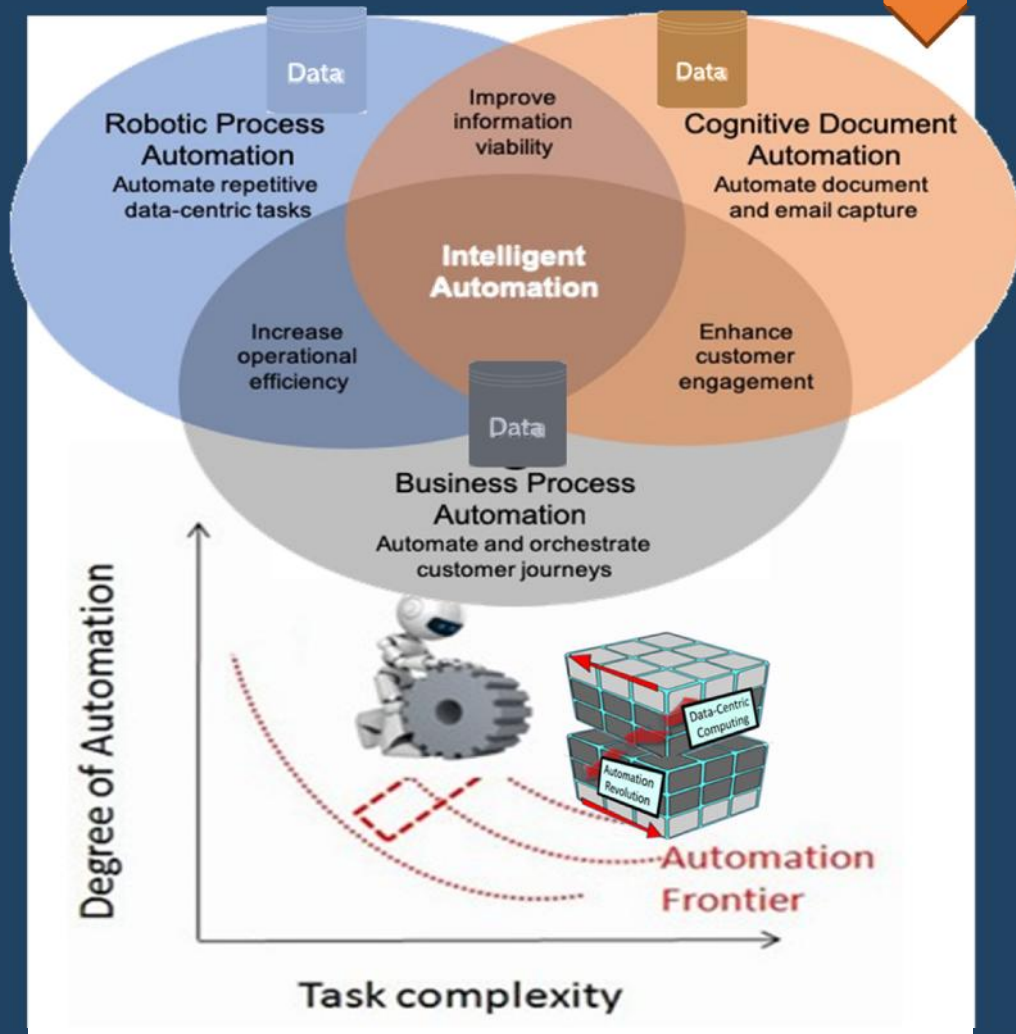
- back office computing **to** customer facing computing
- technology as an enabler **to** critical competitive tool
- from antivirus **to** cyber (critical)
- development from waterfall **to** agile
- **Employees**
 - get same tech customers got
 - introduced to **data (literacy)**



"A *post-digital world* doesn't mean that digital is over. On the contrary, *as all organizations develop their digital competency, what will set YOU apart?*"



Paul Daugherty
Chief Technology &
Innovation Officer
ACCENTURE

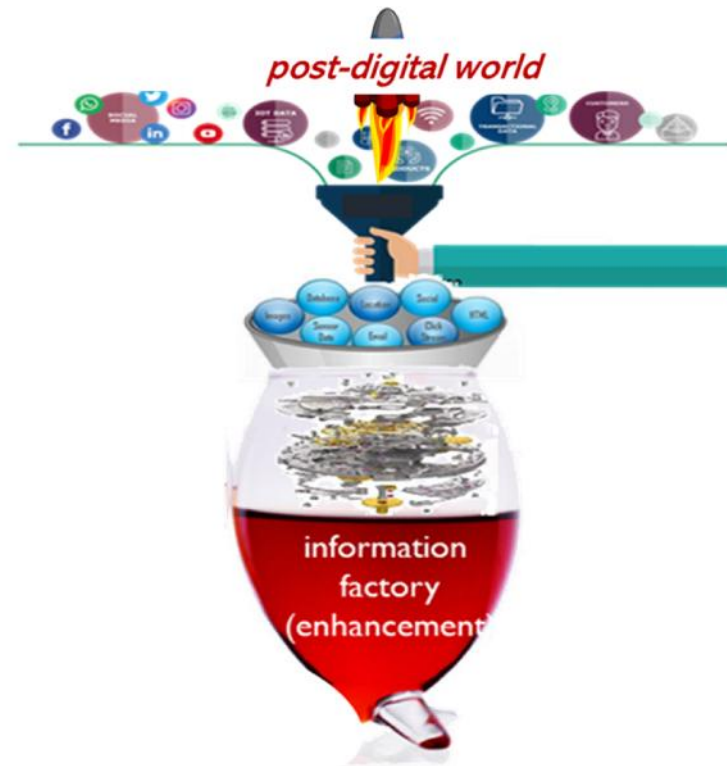




DATA CENTRIC COMPUTING “preemptive” transformation (2020 - 20XX)

can only start **after modernizing**
back office and core systems

- build a standard data model
- build a **strong data supply chain**
- build a **strong algorithms and data science team**
- implement analytic **tools and data literacy** programs
- start **automating clerical jobs**
- HR learns to manage a mixed workforce (people + robots)

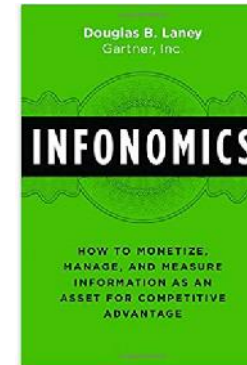


Data Centric Computing

Systems of Decisions

principles of the “data centric manifesto”

- Data is a **key asset** of any organization.
- Data is **self-describing** and does not rely on an application for interpretation and meaning.
- Data in **open, non-proprietary formats**.
- Access to and **security of the data is a responsibility of the data layer**, and not managed by applications.
- **Applications use the data, results go back into the data layer** for all to share.
- Laying the **data groundwork** to move the enterprise from **automated to autonomous**



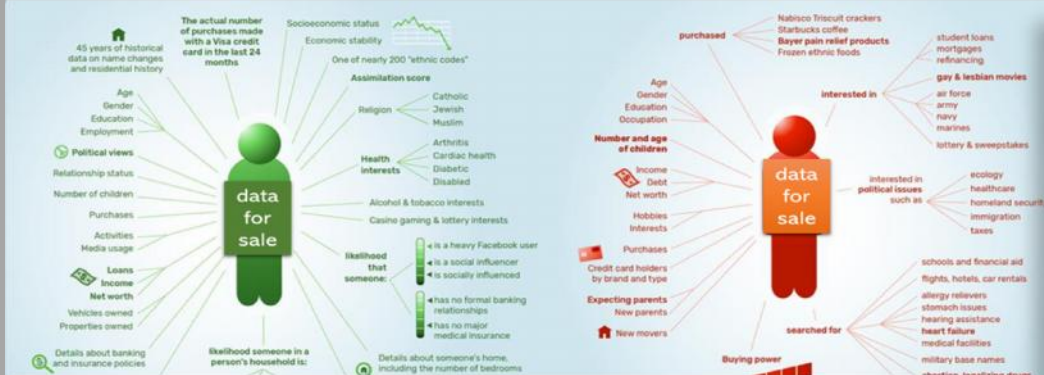
Doug Laney
(father of BIG DATA)

INFONOMICS all about DATA

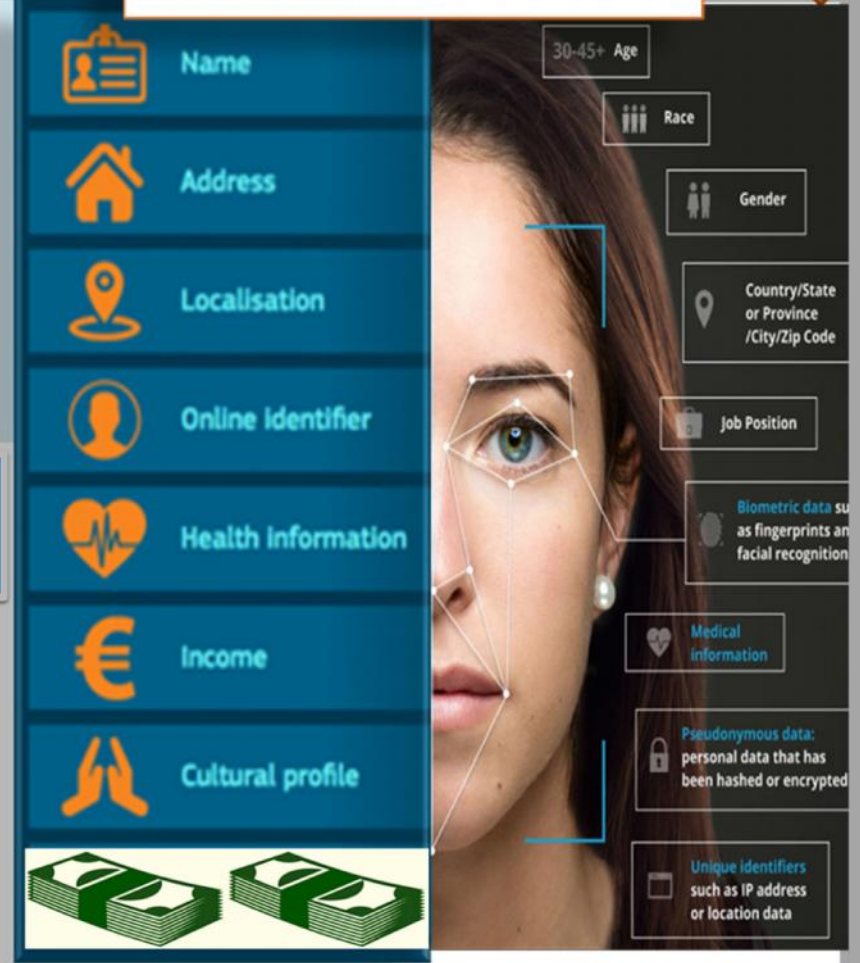
methods for *quantifying*
data as a asset

tactics for *using data*
as competitive edge

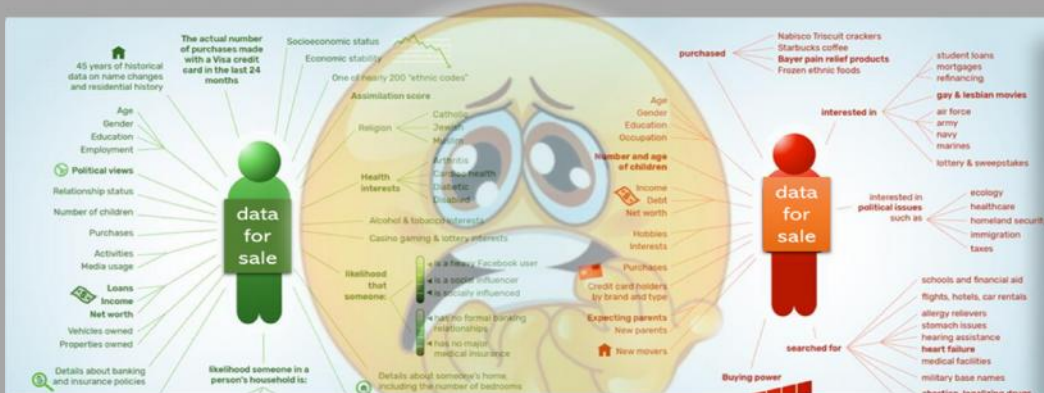
user data monetization



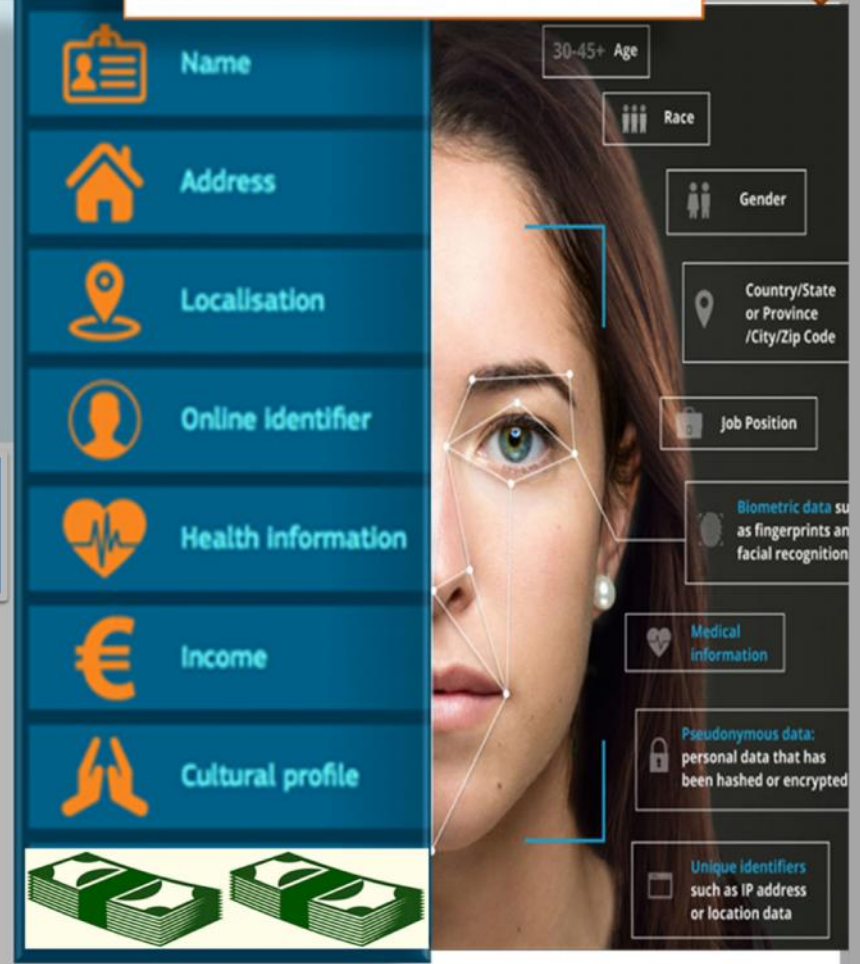
CORPORATE SURVEILLANCE IN EVERYDAY LIFE



user data monetization

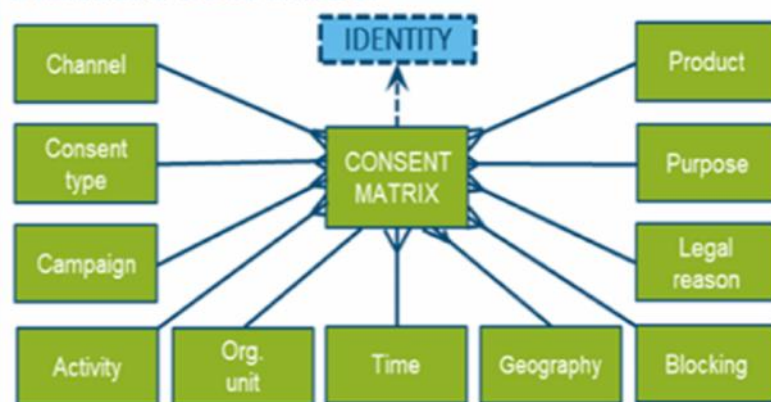


CORPORATE SURVEILLANCE IN EVERYDAY LIFE



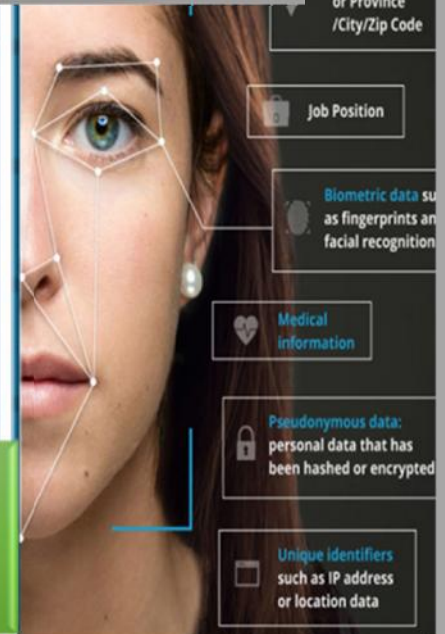
everybody needs a Chief Data Officer
but where in the organization?

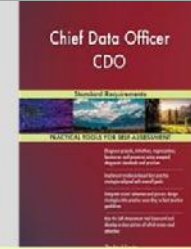
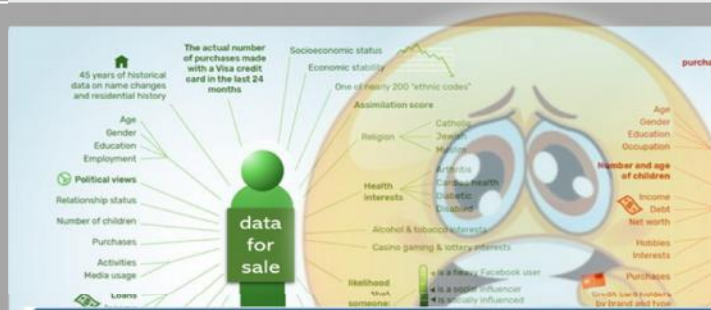
Standard data model



everybody needs a
Consent Management Module

- The right to be informed
- The right of access
- The right to rectification
- The right to erasure
- The right to restrict processing
- The right to data portability
- The right to object
- Rights in relation to automated decision making and profiling





**everybody needs a Chief Data Officer
but where in the organization?**

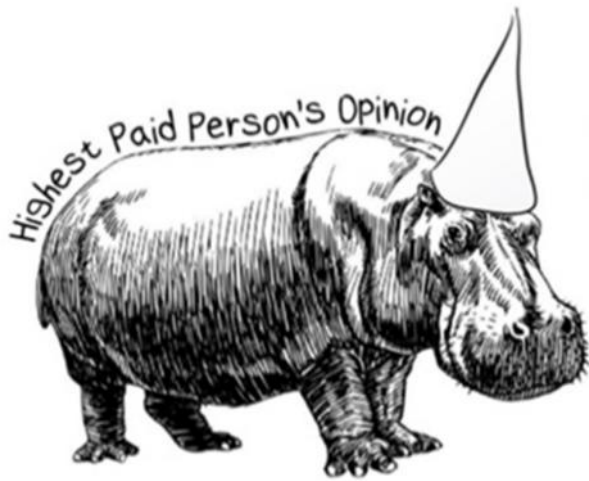
Standard data model

CDOs are in charge of the
“Battle Between
Consent and Privacy”
to create customized and personalized
experiences, a certain level of data
needs to be accessible

- The right to be informed
- The right of access
- The right to rectification
- The right to erasure
- The right to restrict processing
- The right to data portability
- The right to object
- Rights in relation to automated decision making and profiling

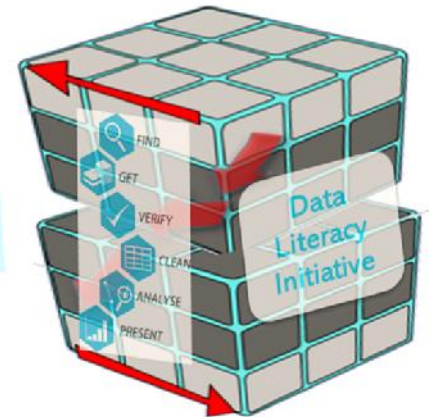
**everybody needs a
Consent Management Module**



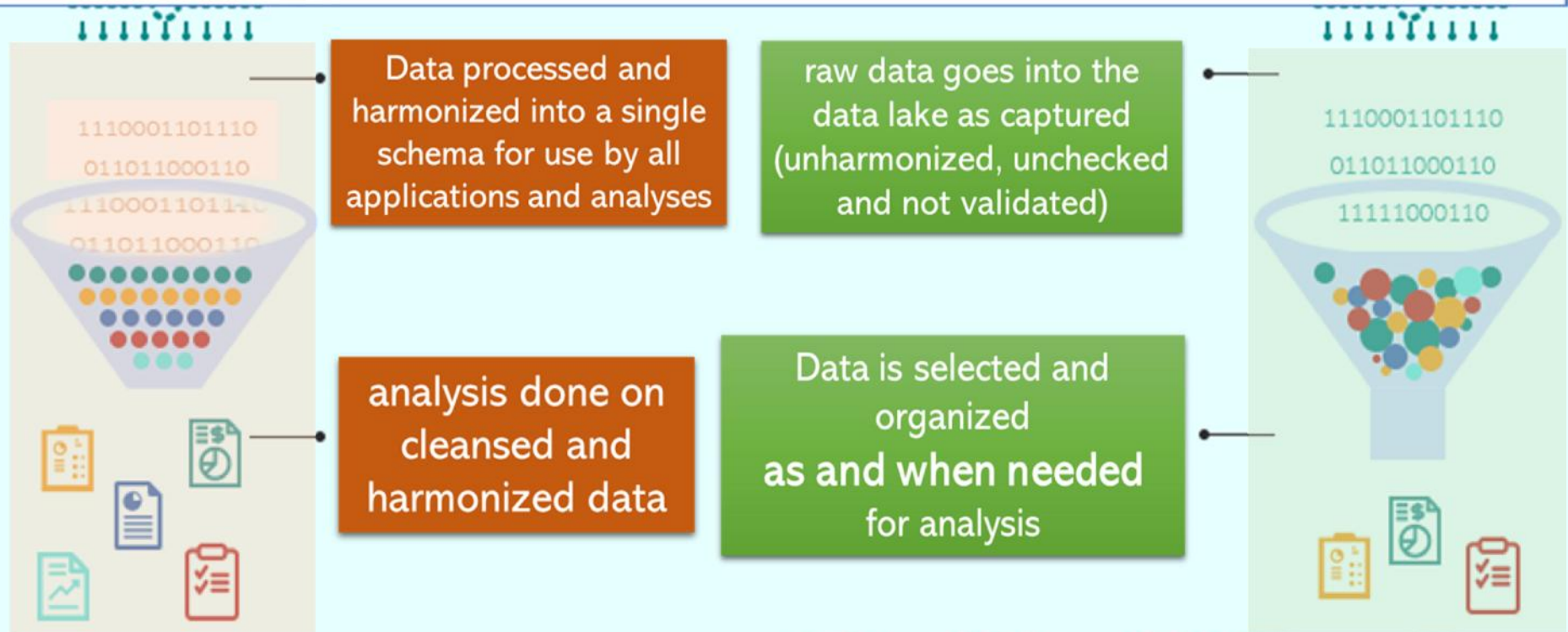


data-driven IT

HIPPO or Analytics ?
for most organizations,
the key to becoming a
data-driven organization
is a
culture (terroir) change
"DATA LITERACY
INITIATIVE"



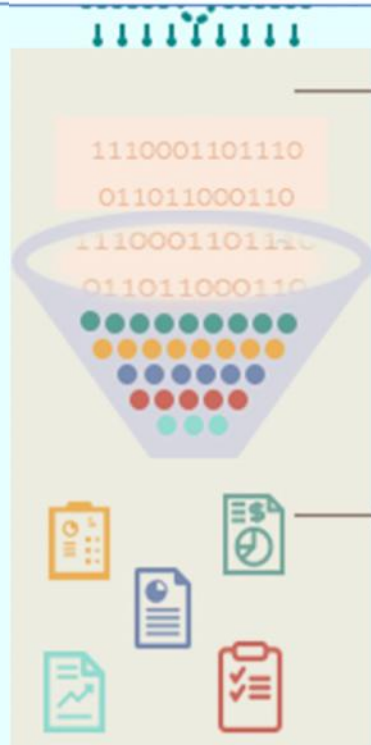
an organization can be
 less **DATA CENTRIC** as it becomes more **DATA DRIVEN**



less DATA CENT

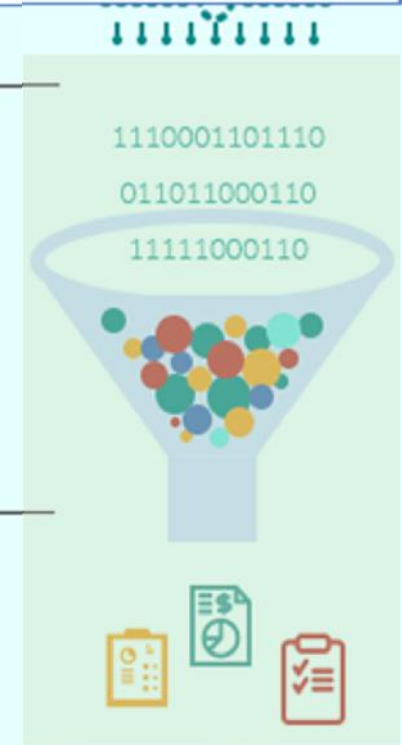
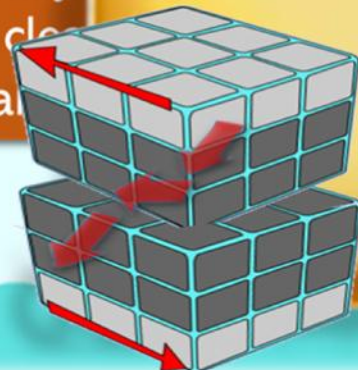
ATA DRIVEN

this will be
explained better
during the session
“data-centric IT”



Data p
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applicati

analys
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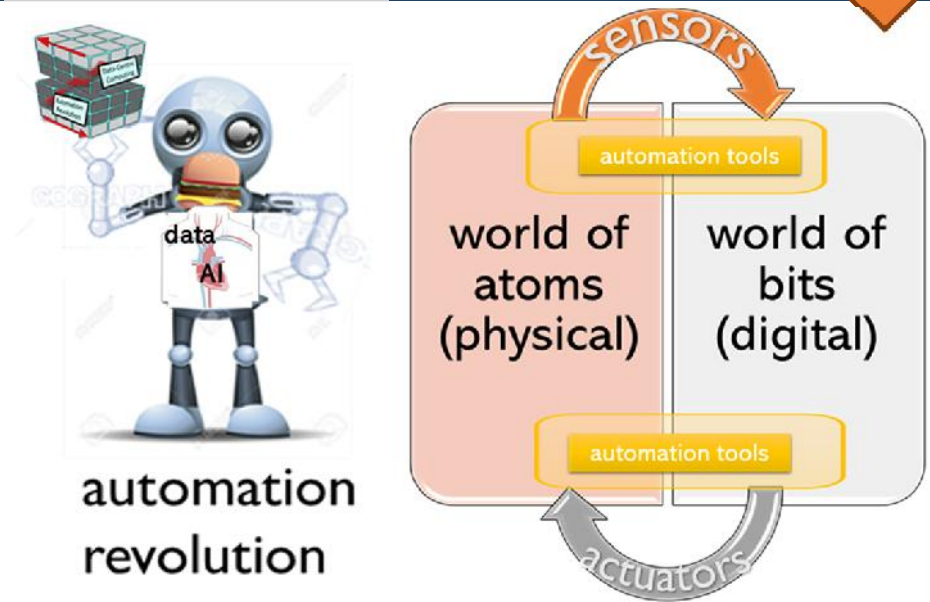




AUTOMATION REVOLUTION “preemptive” transformation (2021 - 20XX)

can only start **after** the organization is data-centric (poor quality data will hinder automation efforts)

- continue to automate clerical jobs
- automate professional jobs
- build a **core framework for implementing and scaling automation**
- decisions based on insights (ML/ DL)
- design new customer self-service solutions
- **HR manages a mixed workforce (people + robots)**
- skills gaps between bits-oriented and atoms-oriented employees must be overcome

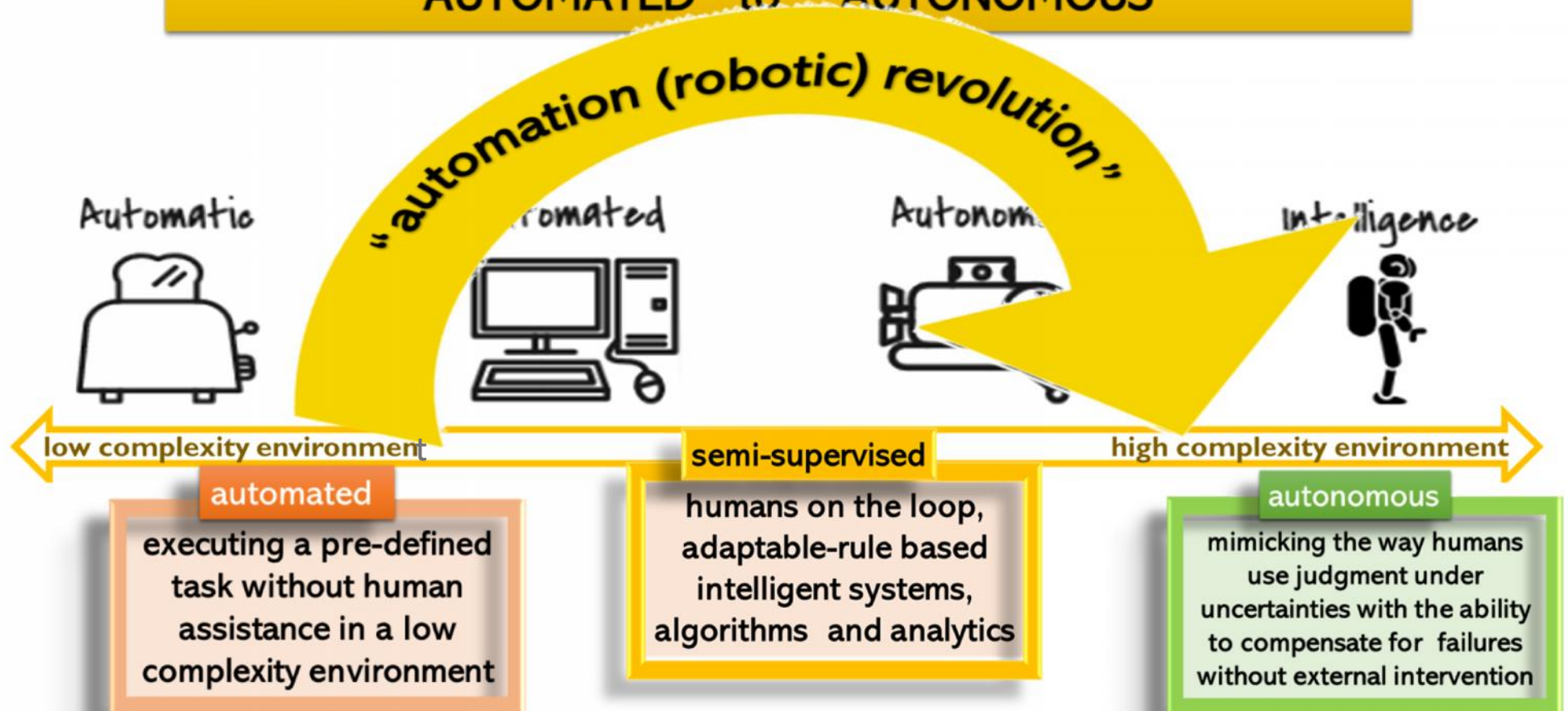


In the “automation revolution” we are going to **apply patterns and insights (from data and algorithms) to the hybrid world of atoms (physical) and of bits (digital).**

Value created by **automation tools will break the silos** and cross the physical/digital divide.

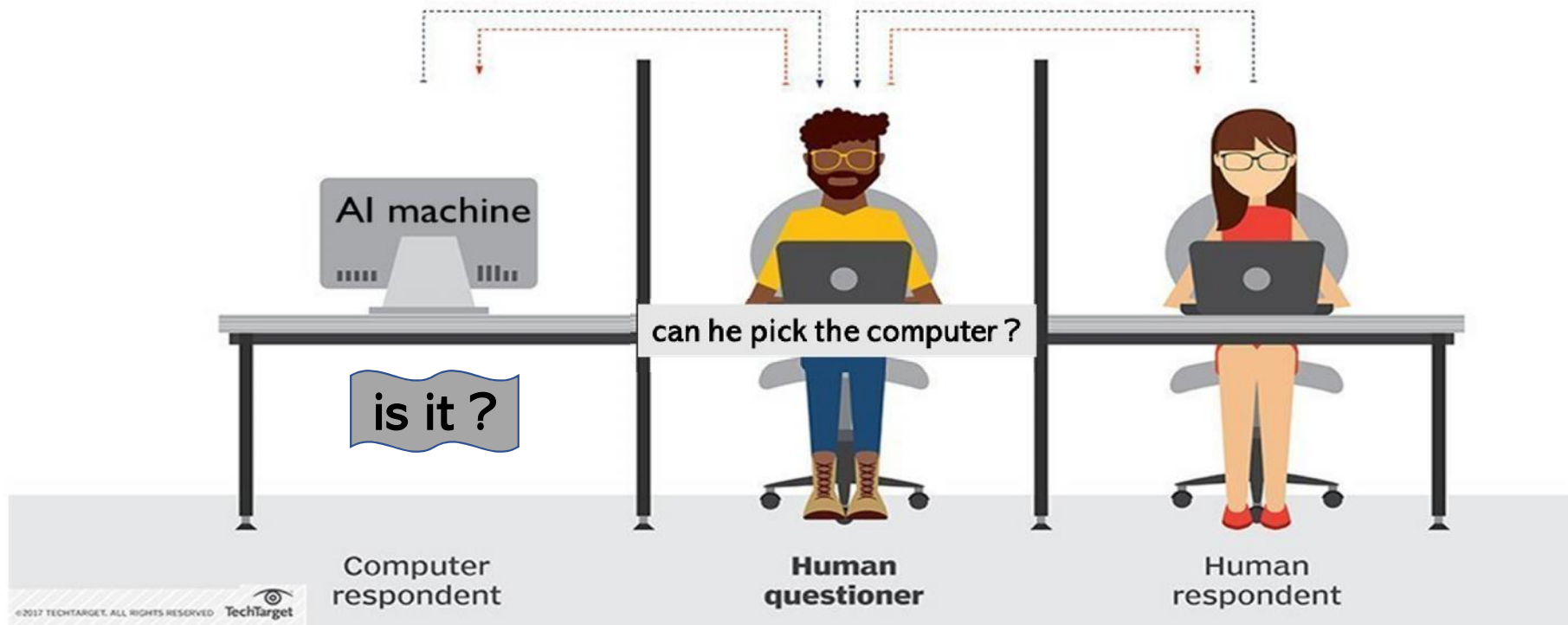
“data-centric “ IT

*maximize the potential of its data and moves the enterprise from
AUTOMATED to AUTONOMOUS*



TOURING TEST is all about knowing if the software AUTOMATED or AUTONOMOUS

asking a series of questions requiring judgement and ability to compensate for errors



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ECOMOTION
SMART TRANSPORTATION COMMUNITY



ISRAEL
INNOVATION
INSTITUTE



Fuel
Choices and
Smart Mobility
Initiative



Ministry of Economy and Industry

EcoMotion is a Israeli community with over 600 start-ups and 8,000 members in the Smart Transportation sector.

Companies that have tested their technologies in a stretch of Road 531 during 4Q2018 with Minister of Transport permission:

- **Nexar:** which has developed a dashboard camera app connected to the cloud that provides warnings about danger
- **General Motors Israel:** trying out the autonomous car it has developed
- **Intel (Mobileye):** trialing its latest developments
- **Innoviz:** is experimenting with its LiDAR remote sensing solutions
- **Argus:** trying out its solutions for vehicles that enable advanced connectivity features while protecting vehicles from being hacked

Pull over Detroit: Israel is Motown for Self-Driving Car Tech

Car manufacturing is not about tires or brakes anymore, but the technology inside the car
“sensors and algorithms”



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autonomous driving will “also” Change Our Cities

Cars Are About to Get Chatty

Talking cars could be the first step toward supersafe roads.

The Atlantic

Just Wait Until Cars and Cities Start Talking Amongst Themselves

By: Rob Enderle | March 11, 2019

eWEEK



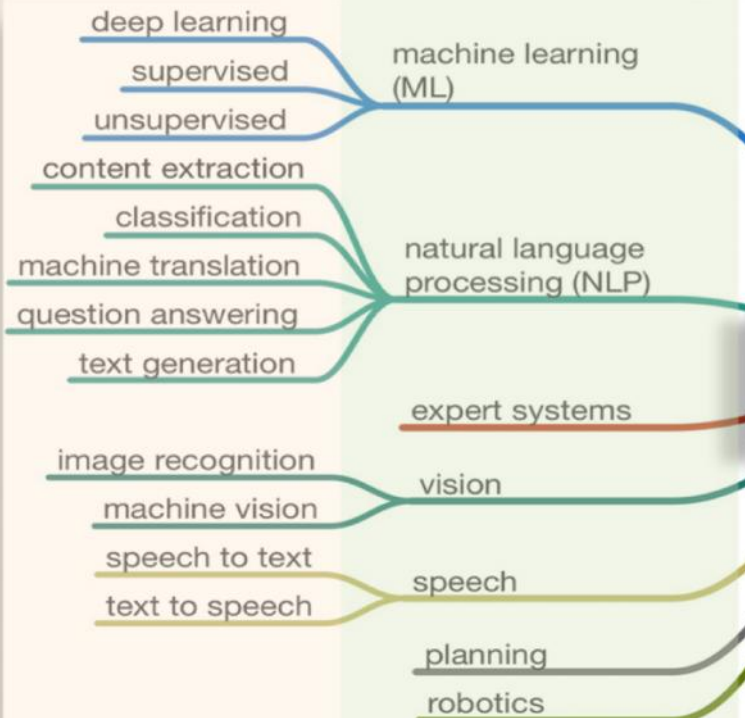
In 2030 we will
wonder how we
survived before
**autonomous
(chatty) talking cars**

Queensland Government (Australia) has signed an agreement to
standardize a new security system platform
that will help cars “talk” to each other safely.

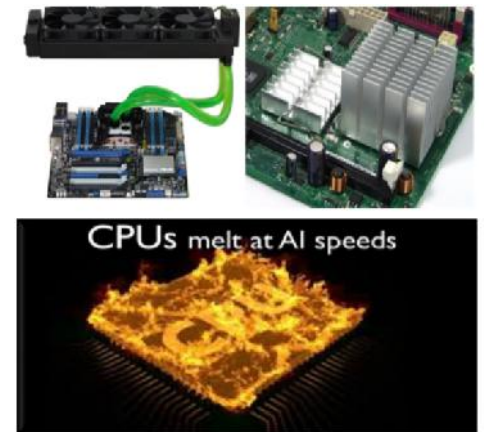
from rule based engines through algorithms and finally into neural networks

learning based on
DEEP NEURAL
Networks

ability to learn without
being explicitly
programmed



CPU 2018 technology
cannot work with
AI/ML applications
we need
new processor architecture



from rule based engines through algorithms and finally into neural networks

learning based on
DEEP NEURAL
Networks

ability to learn without
being explicitly
programmed

deep learning
supervised
unsupervised
content extraction
classification
machine translation

machine learning
(ML)

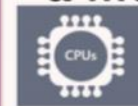
natural language
processing (NLP)

just as with any computer program,
artificial intelligence accuracy
will only ever be as good as the
DATA AND INSIGHTS
provided

robotics

NEW chip-set a must

DPU: deep neural network (DNN) processing unit that can be reprogrammed at the logic gate level.
FPGA: field programmable gate array
Hard DPU: DPU that cannot be reprogrammed



FLEXIBILITY

EFFICIENCY

CPU: general-purpose central processing unit.
GPU: graphics processing unit.

BrainWave
Baidu SDA
Deepthi Tech
ESE
Teradeep
Etc.

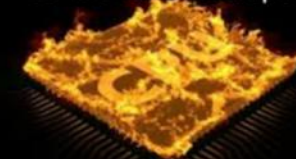
Cerebras
Google TPU
Graphcore
Groq
Intel Nervana
Movidius
Wave Computing
Etc.

ASIC: application-specific integrated circuit, effective for one application only.

TPU: tensor processing unit. Google's architecture for machine learning.



CPU's melt at AI speeds

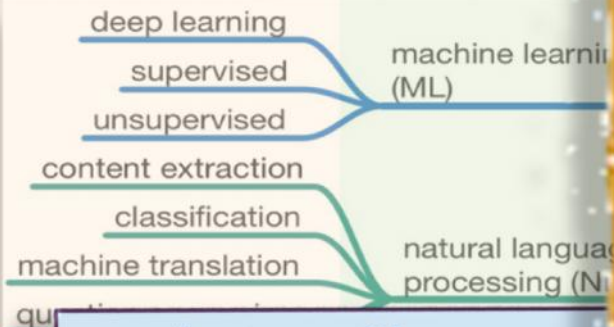


from rule based engines

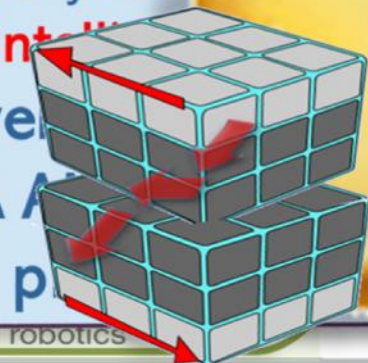
neural networks

learning based on
DEEP NEURAL
Networks

ability to learn v
being explic
programm



just as with any com
artificial intelli
will only ever
DATA A



robotics

this will be
explained better
during the session
“Smarter
Enterprises
Initiative”

processing unit that
ic gate level.
array
reprogrammed

(DNN)



EFFICIENCY

TPU
core
servana
base
computing

ASIC: application-specific integrated circuit, effective for one application only.

TPU: tensor processing unit. Google's architecture for machine learning.



CPU's melt at AI speeds





LEGACY ORGANIZATIONS
are **not set up** to run efficiently
and effectively **customer facing**
applications because of:
"technical debt, data debt,
process debt"

In order to **pay the debt**
CIOs don't have to be **smarter**
than the rest, they must be more
disciplined than the rest.



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Cost of additional rework in the future plus opportunity cost for lost potential



Deliberate tech debt

- Decisions made in order to reduce time to deployment



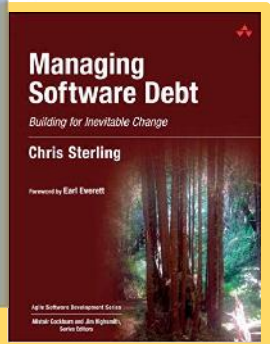
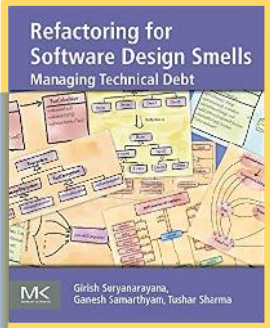
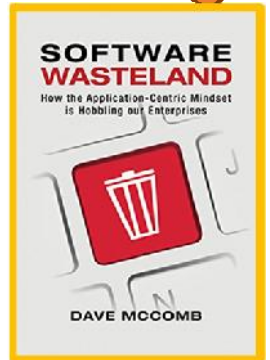
Accidental/outdated design tech debt

- Design decisions because of changing requirements



Aging tech debt

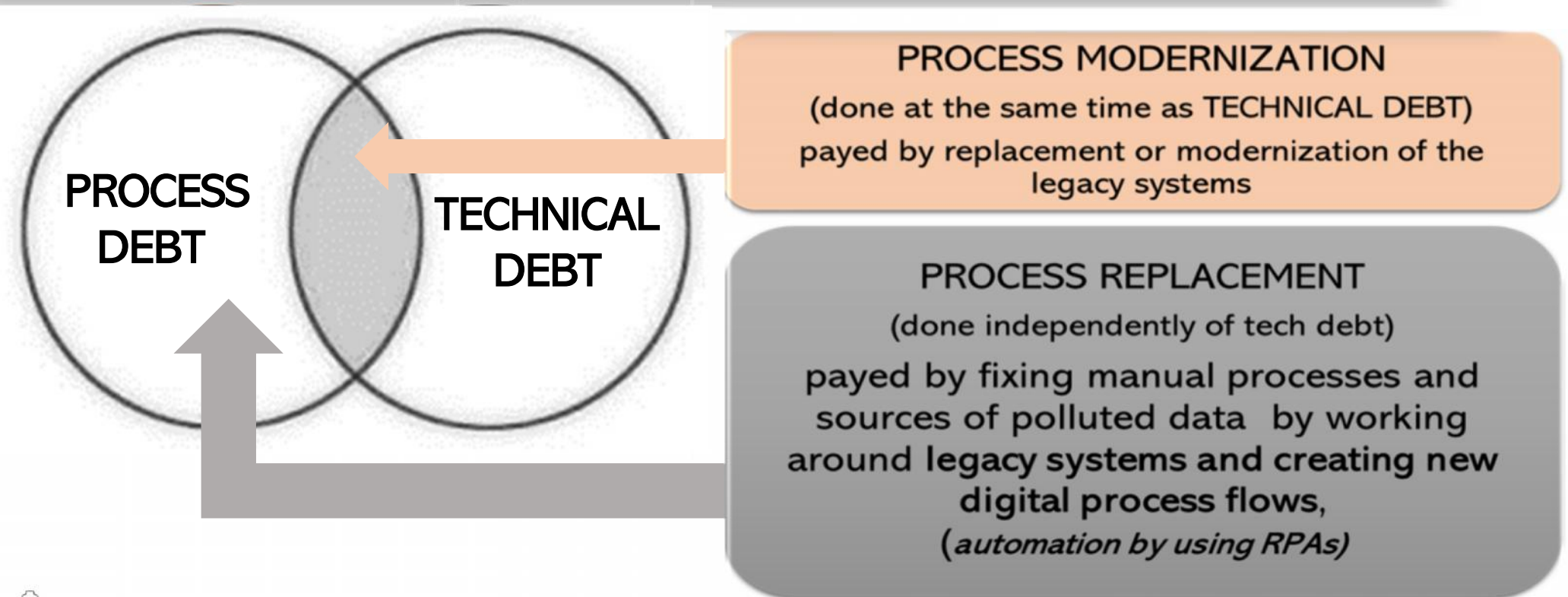
- Systems evolve into unnecessary complexity (lots of incremental changes not compatible with original design)



PROCESS REPLACEMENT & MODERNIZATION

(management is accountable for accrual of this debt: was incurred by business decisions)

reflects the decisions taken (no integration tools available or deliberate shortcuts)
when work process didn't end up computerized and are done manually



Data Debt

Digital Exhaust. Machine Data Time-series Data, Big Data.
Whatever you call it

data is one of the most underused and undervalued assets

When DATA LITERACY is low
data is usually kept for some minimum amount of time
before being tossed out and never looked at again.

HBRLONG SEPTEMBER-OCTOBER 2017
**Harvard
Business
Review**

DATA

**Only 3% of Companies' Data
Meets Basic Quality
Standards**

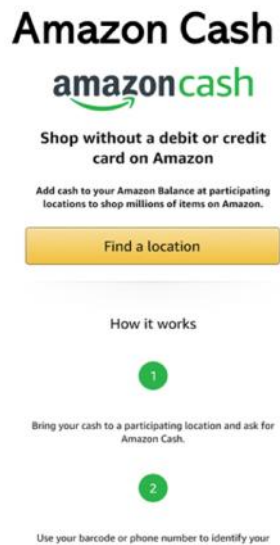
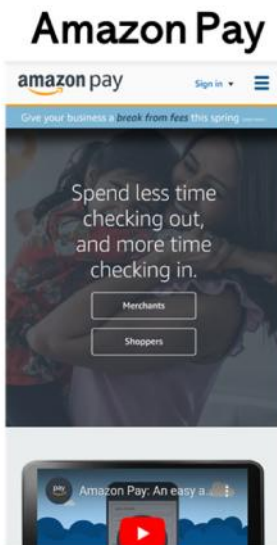
by Tadhg Nagle, Thomas C. Redman, and David Sammon

SEPTEMBER 11, 2017



How can banks in Israel fight Amazon-like tech banks ?

Only by paying their technical (also data & process) debts



Amazon Lending

Take your business to new heights with Amazon Lending

Refinance Loan Request Amount

£58,500	
9 Month Terms	
£58,500	
£53,500	
£48,500	
12 Month Terms	
£45,500	
£43,500	
£38,500	
6, 9 or 12 Month Terms	
£43,500	
£33,500	
£28,500	

Total Interest (12.29% annual interest) £3,061.44
 Arrangement Fee £0
 Total Payments £81,561.44
 Monthly Payment £8,840.16
 Total Cost of Financing £5,229

APR is 12.29% for the selected payment term. Late payments will be charged at the late interest rate of 14.29% (annual interest rate 16.17%).

Amazon Protect



About Amazon Protect

Amazon Protect offers additional coverage against accidental or manufacturer's induced damage or theft for select electronic product

Extended warranties, accidental damages and theft insurances are available for purchase from your device's product detail page on Amazon. After purchasing an insurance policy for your product you'll receive an automated e-mail that includes the details of your insurance and an official confirmation of purchase. Alternatively, you can also view your policy documents in Your Account by visiting [Your Orders](#), locating the applicable order, and clicking [View Policy Documents](#).

Note: This option won't appear if you have multiple Amazon Protect ASINs in the order, or if the insurance has been transferred to another person.

Tip: You can read the full terms and conditions by clicking the link for the Amazon protect insurance



Bank of Amazon
could woo over
2 million
Israeli customers
in 5 years

Source: Amazon, 2019



How can banks in Israel fight Amazon-like tech banks ?
Only by paying their technical (also data & process) debts

Amazon Pay

Amazon Cash

Amazon Lending

Amazon Protect

MARKETS

Next Up for Amazon: Checking Accounts

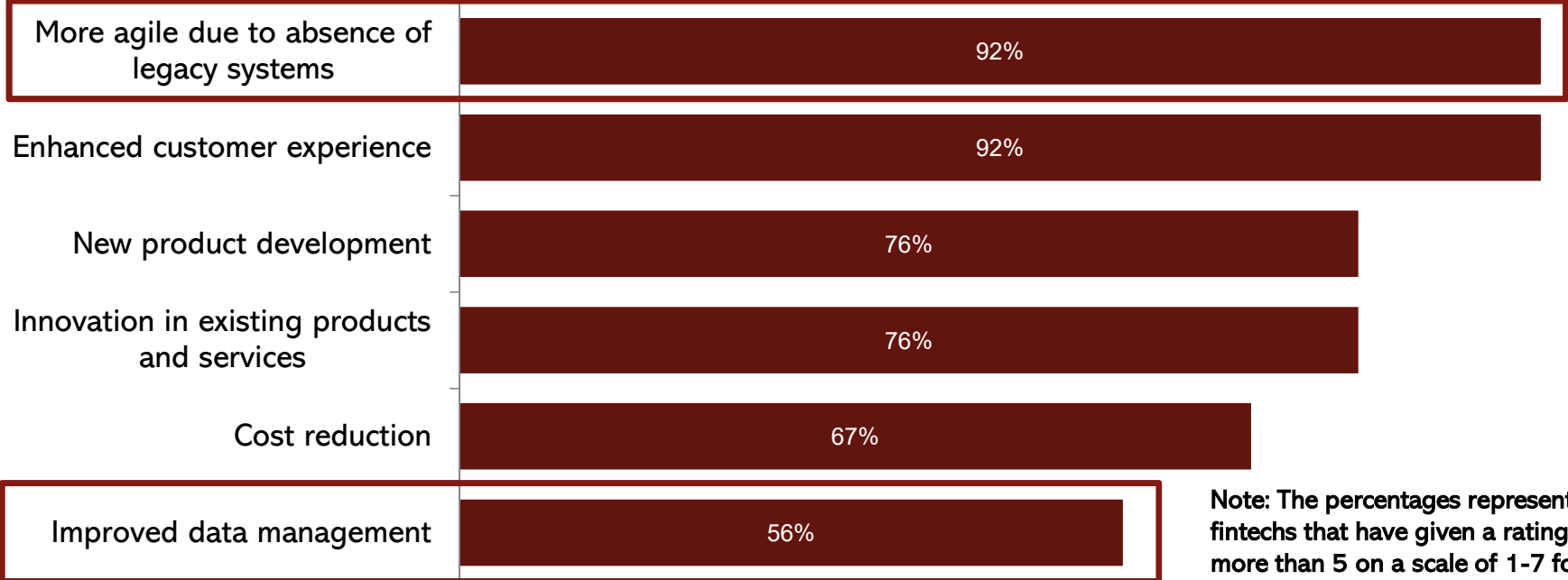
“The question is not how fast tech companies will become financial competitors, but how fast Israeli financial organizations will become tech companies”

Source: Amazon, 2019



How banks in Israel are fighting TECH-DEBT? Overhauling their core systems to make them more agile

Banks need to get competitive advantages on FinTechs and Tech Banks



Note: The percentages represent fintechs that have given a rating more than 5 on a scale of 1-7 for each of the options.

Source: Capgemini, 2018



*another solution for enterprises:
SHARE PARTS OR ALL OF “**NEW**” CORE
software system with competitors*

very expensive project but
**DOESN'T GIVE
COMPETITIVE EDGE.**

-“the way they will use
data
will give them an edge”-



TECHNICAL PROCESS & DATA debt payment

“CORE SYSTEMS” need adaptability and scalability properties because of changing business models, regulation, analytics (better data) , process automation and integration to new consumer facing software

CORE REPLACEMENT OR MODERNIZATION



Migration of languages, databases & platforms



Re-hosting legacy applications, with no major changes, on a different platform. Business logic is preserved as application and data are migrated into the open environment.



Re-engineering legacy applications in a new technology or platform, with same or enhanced functionality



Replacement of legacy (older versions of packages also) applications in whole or part, with off-the-shelf software¹

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TECHNICAL

"CORE SYSTEMS"

because of changing business
automation and in

nt

properties

(or data) , process
software

CORE REPLA

IZATION



Migra

forms



Re-hosting
different platform
and

changes, on a
application
ment.



Re-

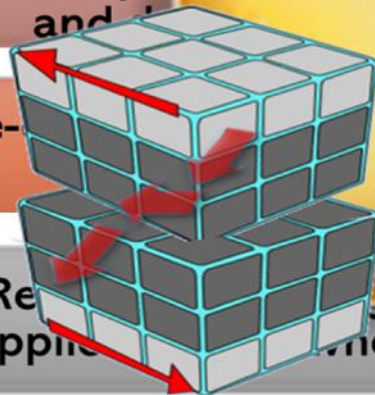
technology or
ity



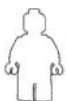
Re-
applic

whole or part, with off-the-shelf software¹

this will be
explained better
during the session
"re-designing IT
Initiative "



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The Outcome-Driven Approach to Innovation

Strategy and innovation process based on the view of “*getting the job done*”

Understand the “*underlying job*” the customer is trying to *execute* when they are using a product or service.

Jobs are different from solutions : different solutions to get the same job done. Jobs will remain the same even when technology evolves.



Outcome-Driven Economy

is a strategy, innovation and product development process developed by Anthony Ulwick.

- In 1999 he published ODI ideas in a book “**what customers want**”
- In 2002 he published an ODI article in the Harvard Business Review
- In 2016 Ulwick published another book “**Jobs to be Done: From Theory to Practice**” defining the practice of ODI as Job Theory
- In 2018 many startups, innovation departments, IT & Software developers **switched to ODI**

Harvard Business Review 
www.hbr.org

From the January 2002 Issue

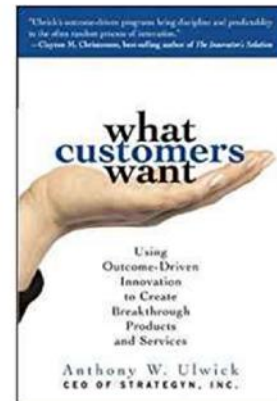
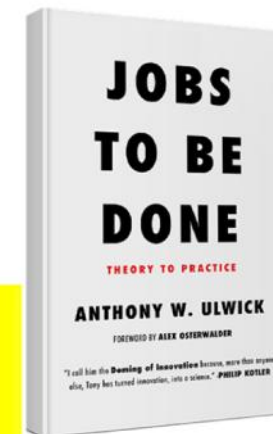
BEST PRACTICE

Turn Customer Input into Innovation

by Anthony W. Ulwick



Anthony W. Ulwick



Digitalist Magazine

Future of Work Customer Experience Digital Supply Networks CFO Knowledge CIO Knowledge Improving Lives Cyber Security

Digital Economy Machine Learning/AI Human Machine Interaction Blockchain

Selling Solutions: The Rise Of The Outcome-Based Economy

Dean Afzal

Instead of selling a product, or service companies are getting into the **solution business** by launching their own **solutions marketplace**, retaining direct customer relationships while **monetizing everything that touches the business**.

Escape From the Feature Roadmap to Outcome-driven Development



Blog | Events: ProductTank Conferences Training | Jobs

BY ALICE NEWTON REX ON OCTOBER 23, 2018

Say no to features and start talking about problems. Start talking about outcomes. Each team should commit to a particular outcome, rather than to a roadmap of features.

SD Times SOFTWARE DEVELOPMENT

ITOps Times Features SD Times Magazine Learning Center DevOps

API AGILE CONTAINERS DATA DEVOPS DEVSECOPS JAVA LOW CODE MICROSERVICE

Done is dead – welcome to outcome-driven development

In-Depth Latest News Published: January 8th, 2018 - Mike Melnicki

Twitter Email +

Welcome to the brave new world of outcome-driven development. Companies focus on a new definition of “**done**” (**delivering measurable value, not simply completing user stories**)

Focus on value, not outputs, with Software

Outcome driven development is all about the value of outcomes over outputs and Software allows teams to take control over exactly what is put in customers' hands.

customer THINK

Editor's Pick Experience Engagement

Outcome-Driven Innovation Brings Deep Insights To Hardware And Software Development

Tony Ulwick - July 5, 2018

CFO 2018: Finance And The Move To Outcome-Based Business Models

22-Feb-2018 | Tony Klimas | Outcome-Based Economy

The finance function needs to transform itself to serve a new business model, where revenues and profits are recognized in entirely different ways. Here's how.



Digitalist Magazine

Future of Work Customer Experience Digital Networks

Digital Economy Machine Learning Cyber Security Blockchain

Selling Solution Based Economies

Dean Afzal

Instead of selling a product into the solution based marketplace, retain ownership and monetizing every part of the customer journey.

Escape From Outcome-driven Development

mind the PRODUCT

BY ALICE NEWTON REX ON OCTOBER 23

Say no to features and talking about outcome. A particular outcome.

SD Times SOFTWARE DEVELOPMENT

ITOps Times Features SD Times Magazine Learning Center DevOps

API AGILE CONTAINERS DATA DEVOPS DEVSECOPS JAVA LOW CODE MICROSERVICES

Done is dead – welcome to outcome-driven development

development. (overcoming stories)

and hands.

Move To Models

my

serve a new business model, where revenues and profits are recognized in entirely different ways. Here's how.

Innovation Brings Deep Insights To Software Development

Tony Ulwick July 5, 2018

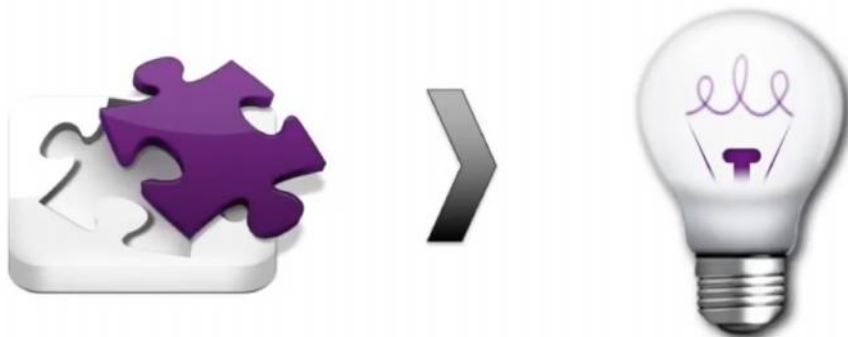
2018 everybody dancing to the ODI song

repeatable and effective process of solutions to address “un-met” customer needs and measurable value to the “work to be done” owner (customer)

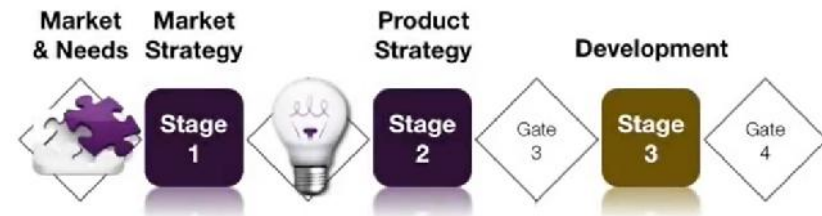
INNOVATION = solutions that satisfy unmet needs



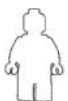
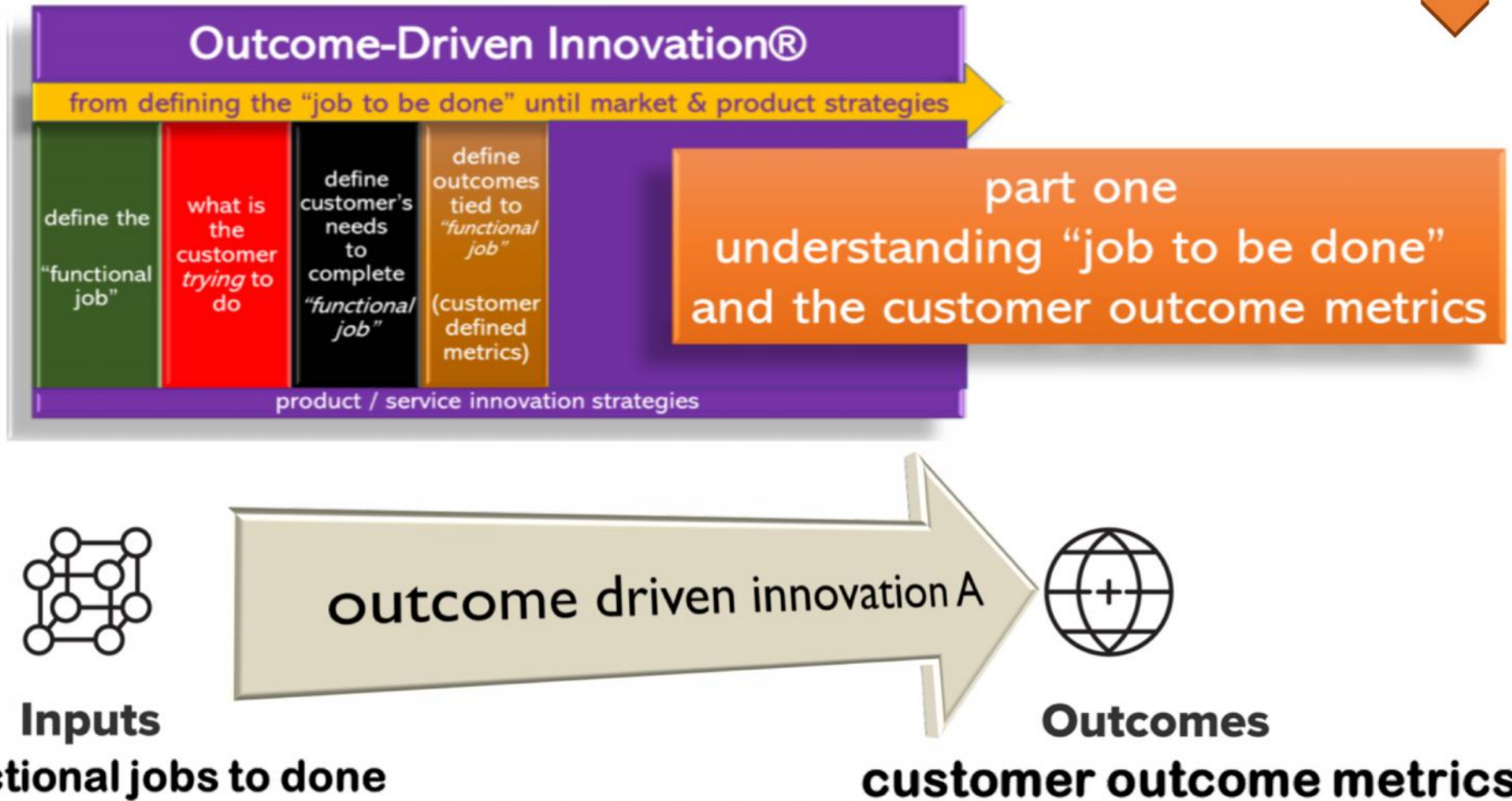
traditional innovation starts with ideas



innovation should be a needs-first process



What “functional job” are we trying to solve?
 Who is the “job executioner” ?
 What “unmet customer needs” segment is a attractive target?



define the
“functional
job”

what is
the
customer
trying to
do

define
customer's
needs
to
complete
“functional
job”



*“underlying job”
is*

*“getting from one place
to another in a city”*

- Job stays the same throughout the years
- Technology and trends change



individual traveling in the city
IS the primary customer



define the "functional job"	what is the customer <i>trying</i> to do	define customer's needs to complete "functional job"
-----------------------------------	---	--

"underlying job"
is
"listening to music"

- Job stay the same throughout the years
- Technology and trends change



individual listening to music
IS the primary customer




Inputs
 functional jobs to done


Outcomes
 customer outcome metrics


Outputs
 discover unmet needs


Impact
 product strategy with the highest measurable impact



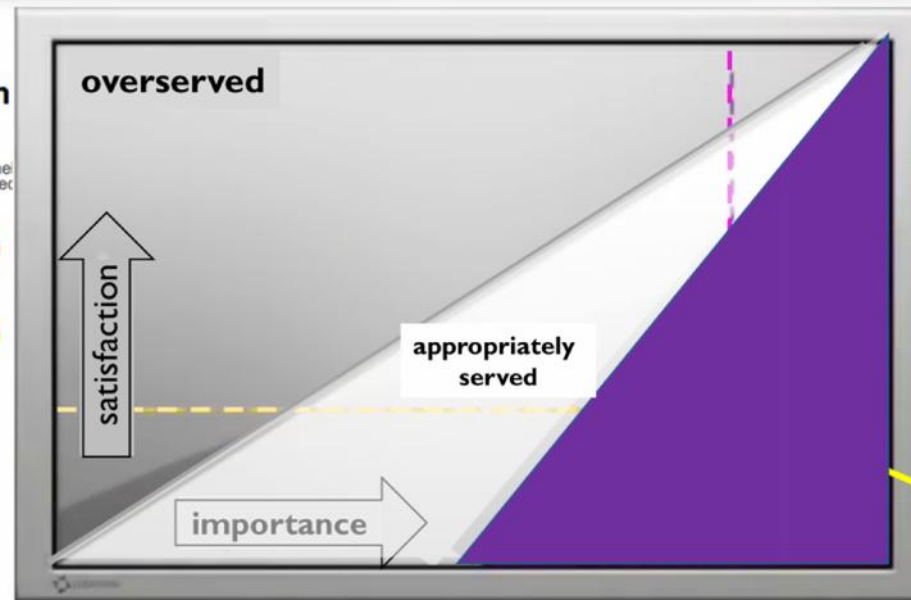
rate outcomes for importance and satisfaction

When using [solution],
how **satisfied** are you with
your ability to:

Not at all
satisfied Somewhat
satisfied Satisfied Very
satisfied Extreme
satisfied



degree to
which
outcomes
are served
(over,
good or
under)



When [job step], how
important is it to you that
you are able to:

Not at all
important Somewhat
important Important Very
important Extremely
important

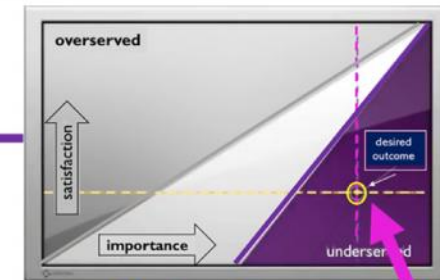
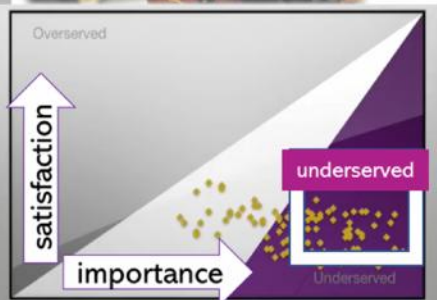
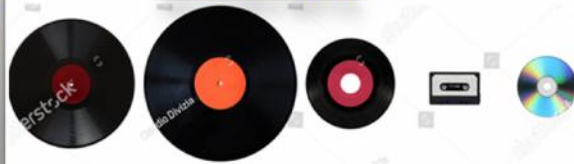


discover
segments
of
customers
with
unmet
needs





but.....
she didn't want to buy
or hear a whole album
at a time her
“underlying job” was
different



listening to
individual songs
(from various artists)
and shuffled

discover
segments
of
customers
with
unmet
needs

market
&
product
strategies

1990



2010

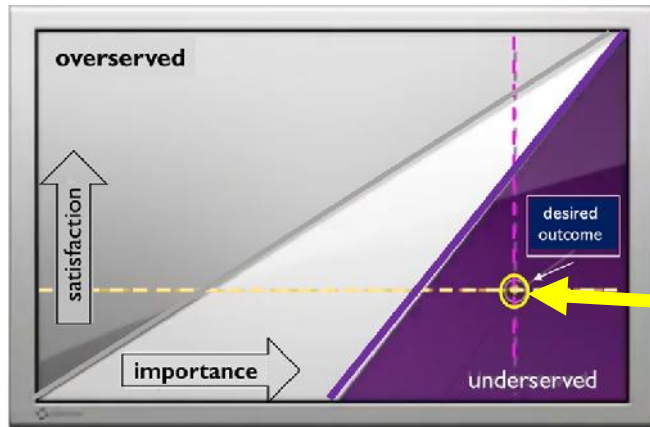


2000



2020





discover
segments
of
customers
with
*unmet
needs*

Apple Card
brings together
several
concepts that
consumers have
only dreamed
about



There's never
been a credit
card this smart?

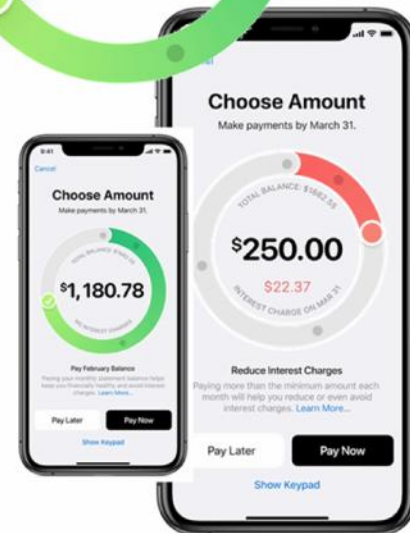


Apple's next big innovation: Becoming a bank (credit card market)

What “functional job” are credit card holders trying to solve?

Who is the “job executioner” ?

What “unmet customer needs” segments are an attractive target?



This is Apple Card.
A new kind of credit card.
Created by Apple, not a bank.

Daily Cash.
No points.
No gimmicks.



No fees.
Not even the hidden ones.

a new level of
privacy and security.

Apple Card
is designed with
all new technologies
(Face ID, Touch ID, unique
transaction codes)
The physical card has no
numbers.
Not on the front. Not on
the back.

Use the iPhone or use the Apple-designed titanium card anywhere in the world
for every purchase you get real cash, to spend it right from the iPhone.

Apple Card doesn't have any fees.

No annual, cash-advance, over-the-limit, or late fees.

Apple Card's goal is to provide interest rates that are the
lowest in the industry.



Hi, I just moved. How do I
update my address?

That's easy. I can do it for you
right now. What's your new
address?

1277 W. Huron St., Chicago, IL
60607

Done! Congrats on the move.
Anything else I can help you
with?

**Have a
question?
Just text.**

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example of Outcome-Driven Innovation®

define the "functional job"	what is the customer trying to do	define customer's needs to complete "functional job"
-----------------------------------	--	--

"underlying job"

Is

*"last mile for deliveries of
groceries, prepared food and
merchandize"*

- Job stays the same throughout the years
- Big innovations now being tested

UNDERLYING JOB

is defined as the movement of goods from the vendor to a personal residence.

discover
segments
of
customers
with
*unmet
needs*

THE FOCUS

of last mile is to deliver items to the end user as fast as possible

outcomes being tested by several organizations for last-mile delivery service

define the
"functional
job"

what is the
customer
trying to
do

define
customer's
needs to
complete
"functional
job"



	B2C			B2B
	Regular parcel ¹	High reliability	Same day	Instant
Rural areas Density of <50,000 inhabitants		Drones (same day, if fulfillment times feasible)		Fulfillment likely not possible at economical cost levels
Urban areas Density of 50,000– 1 million inhabitants		Autonomous ground vehicles with lockers (e-grocery with today's delivery model)		
Urban areas Density of >1 million inhabitants				Droids or bike couriers

discover
segments
of
customers
with
unmet
needs

Mckinsey

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emergence of the outcome economy: implications for businesses

1. shifting from **competing through selling products and services, to competing on delivering measurable results** (important to the customer)
2. developing understanding of customer needs and contexts in which **products and services will be used by measuring “real time” the value delivered** .
3. applying **advanced technologies to data and domain models** in order to calculate costs, manage risks and track all the factors required to deliver the promised value



1 Define the customer's "job-to-be-done"



Use the Job Map to break down the core functional job into discreet steps, describing in detail exactly what the customer is trying to get done. The Job Map reveals a path to create the ultimate solution.

2 Uncover the customer's needs

Use the Jobs-to-be-Done Needs framework to categorize, define, capture and organize all your customer's needs. This framework introduces the types of customer needs that must be considered to gain a deep understanding of the market.

Define a need in the form of a desired outcome statement: the fundamental measure of performance customers use to measure success when getting a job done. An outcome statement reveals what must be measured and controlled to ensure the job is executed with the speed, predictability, and effectiveness customers desire.



3 Quantify the degree to which each outcome is underserved

Survey a statistically valid sample of job executors. Ask them to rate the importance of each outcome and the degree to which each is satisfied, given the solution they use today.



Use the Opportunity Algorithm to reveal which outcomes are under- and overserved. Visualize and interpret the results on the Opportunity Landscape.

Outcome Driven Innovation Jobs to be Done in 6 STEPS

4 Discover hidden segments of opportunity

- Select outcomes to serve as the bases for segmentation.
- Statistically cluster the respondents.
- Profile the segments to determine what is causing some customers to struggle more than others.
- Create statistically valid "personas" or segment descriptions.

Apply the Outcome-Based Segmentation methodology to reveal targets for growth: under- and overserved customer segments and their unique unmet needs.



5 Align existing products with market opportunities

In 2013, Arm & Hammer's Animal Nutrition Division used ODI to develop a new value proposition and align its offerings, messaging, and sales efforts around hidden segments and underserved outcomes it discovered in its core market. The Division achieved 30% year-to-year revenue growth from 2013 to 2014 without changing its product or pricing.

6 Conceptualize new products to address unmet outcomes

Minimize the time it takes to progress through a technical review	5.1	++
Minimize the time it takes to determine whether any observations have occurred	10.4	++
Minimize the time it takes to position the balloon across the lesion	16.1	+
Minimize the time it takes to open the stent	8.2	++
Minimize the likelihood of restenosis (re-narrowing)	16.4	++
Minimize the likelihood of damaging a vessel during the procedure	12.7	++
Minimize the time it takes to determine the location of an advancing balloon in the patient	16.6	++
Minimize the time it takes to advance the balloon to the lesion	9.5	++
Minimize the time it takes to stop patient bleeding at the entry point	8.1	+

Focus ideation efforts on specific performance metrics and evaluate ideas against the same metrics to determine which ideas will get the job done best.

Knowing what outcomes to target and evaluating ideas against them makes the innovation process 5-times more predictable.

Many Different
METHODOLOGIES & TOOLS
“focus on outcomes
not outputs”



“ OUR **INNOVATION TEAMS** ARE
LEARNING **OUTCOME DRIVEN INNOVATION**”

OUR **DESIGN TEAMS** ARE
LEARNING **DESIGN THINKING**

OUR **PRODUCT TEAMS** ARE
LEARNING **LEAN**

OUR **TECH TEAMS** ARE
LEARNING **AGILE**

**EVERYBODY IS USING
DEVOPS AND ITS DERIVATIVES”**



Many Different
METHODOLOGIES

“focus on outcome
not outputs”

this will be explained
better during the
session

“Customer Experience
& Journey Initiative ”

TEAMS ARE
DRIVEN INNOVATION

TEAMS ARE
GROWING THINKING

TEAMS ARE
LEAN

TEAMS ARE
AGILE

TEAMS ARE
USING
DERIVATIVES”



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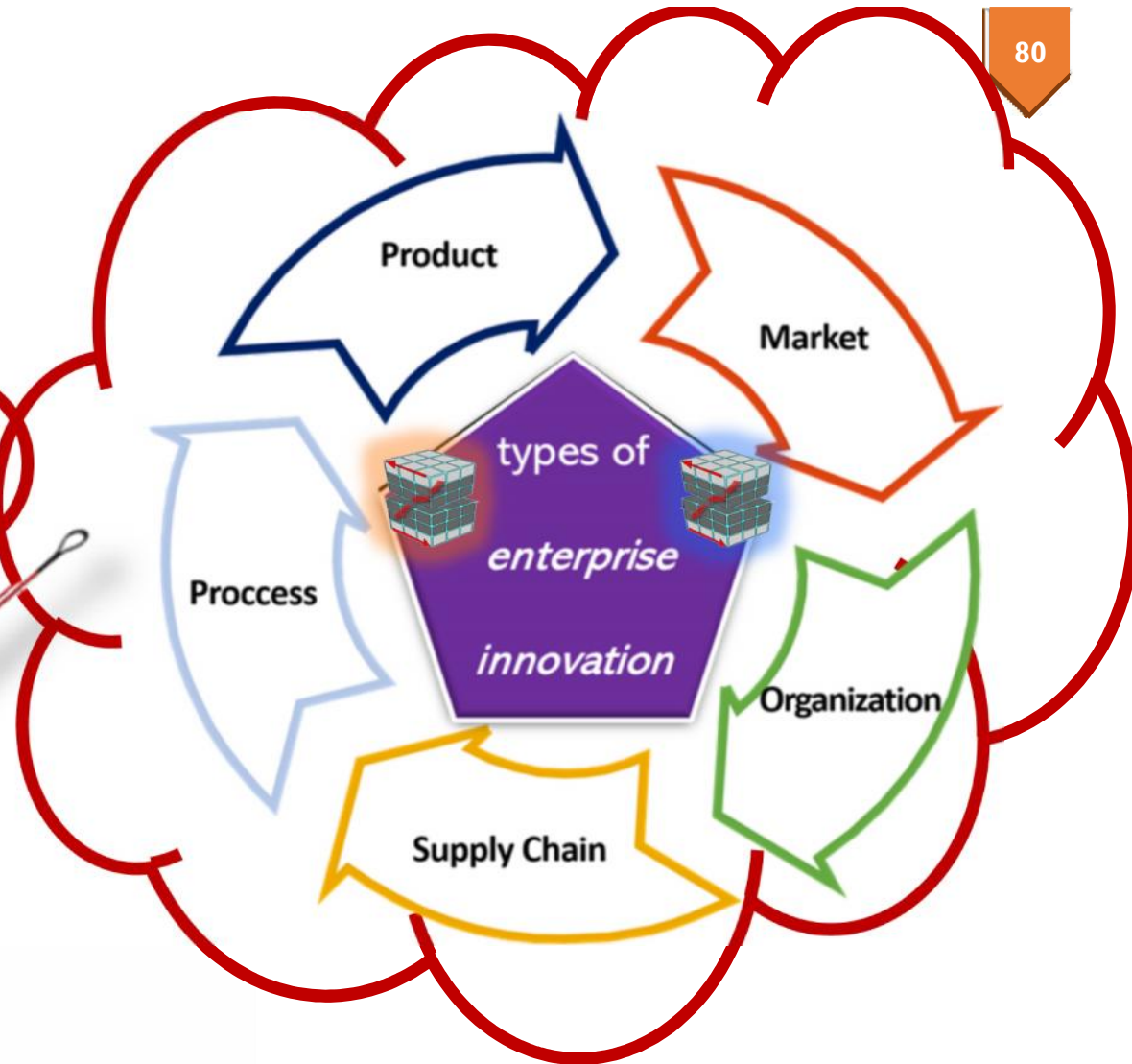
Startups innovate differently than enterprises?

How do enterprises innovate?

How many types of enterprise innovation are there?

Every type of innovation has a different job journey?







Products



IT'S FINE TO BE EITHER !

**Incremental
(sustaining)
Innovation**

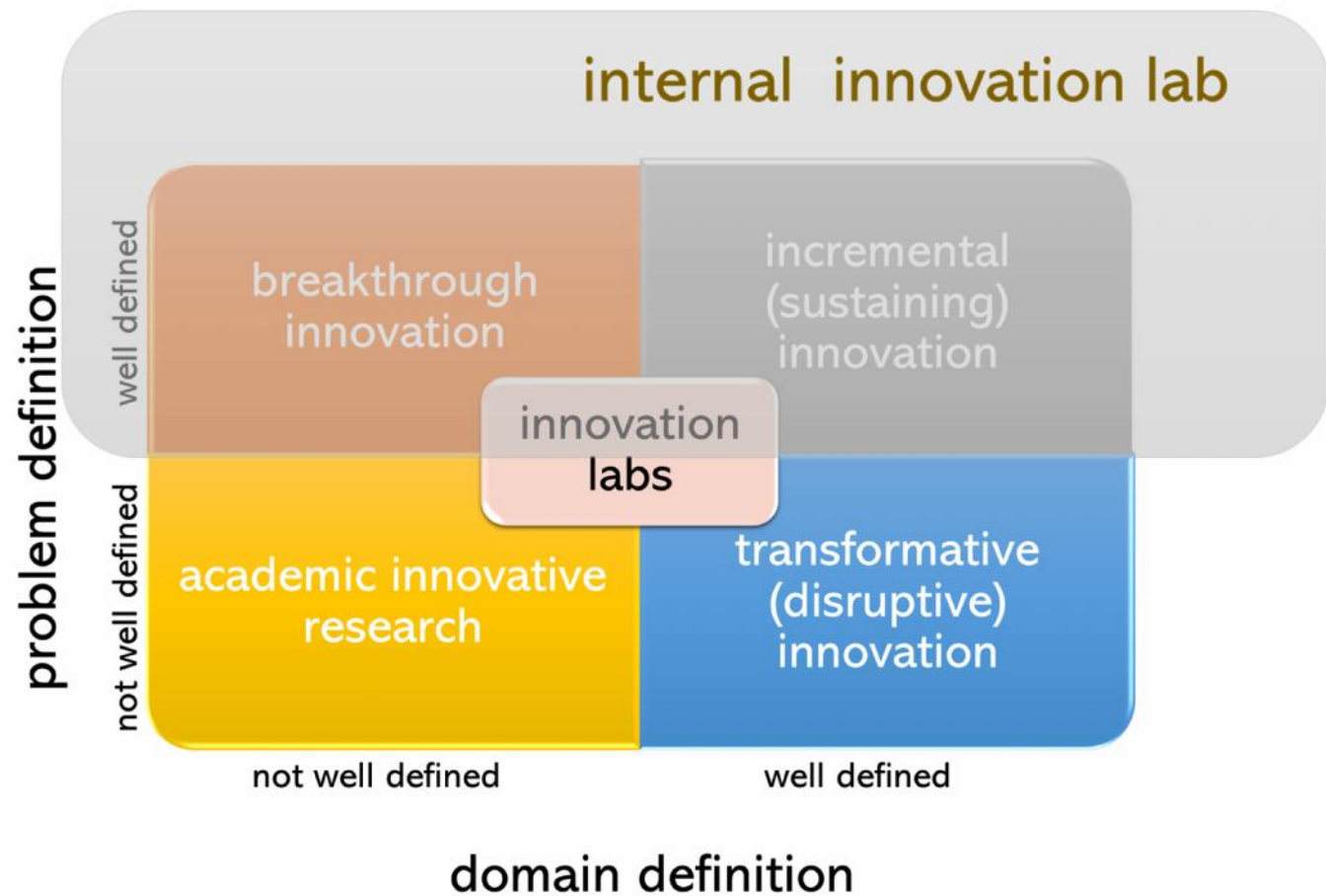
**Breakthrough
Innovation**

**Transformational
(disruptive)
Innovation**



enterprise innovation labs

82



Internal Innovation Lab

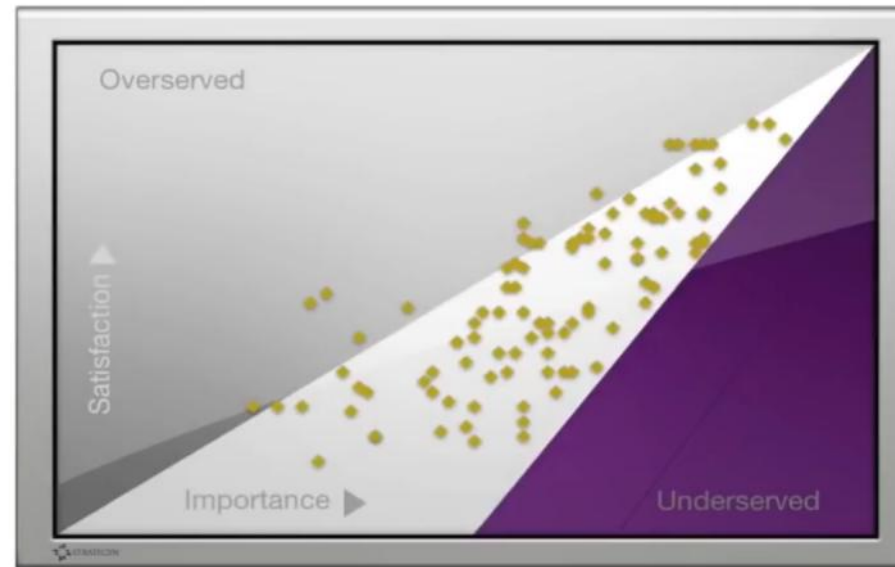


Companies should take a portfolio approach to their innovation effort concurrently pursuing two of the three levels.



Portfolio of incremental and breakthrough innovations can provide most companies with an edge over their competitors and opportunities to grow their business

Appropriately-served segment – add features to help get more jobs done

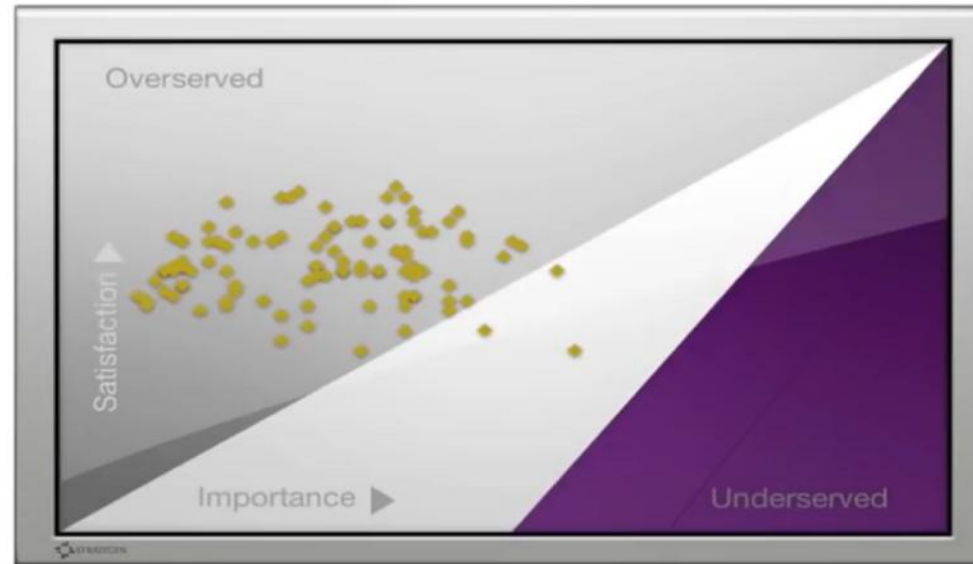


Incremental (sustaining) Innovation

- consist of small improvements in products or services,.
- tend to be the "new and improved" innovations that extend product, service, and business life cycles and improve profitability.



Overserved segment – lower cost solution to get the job done



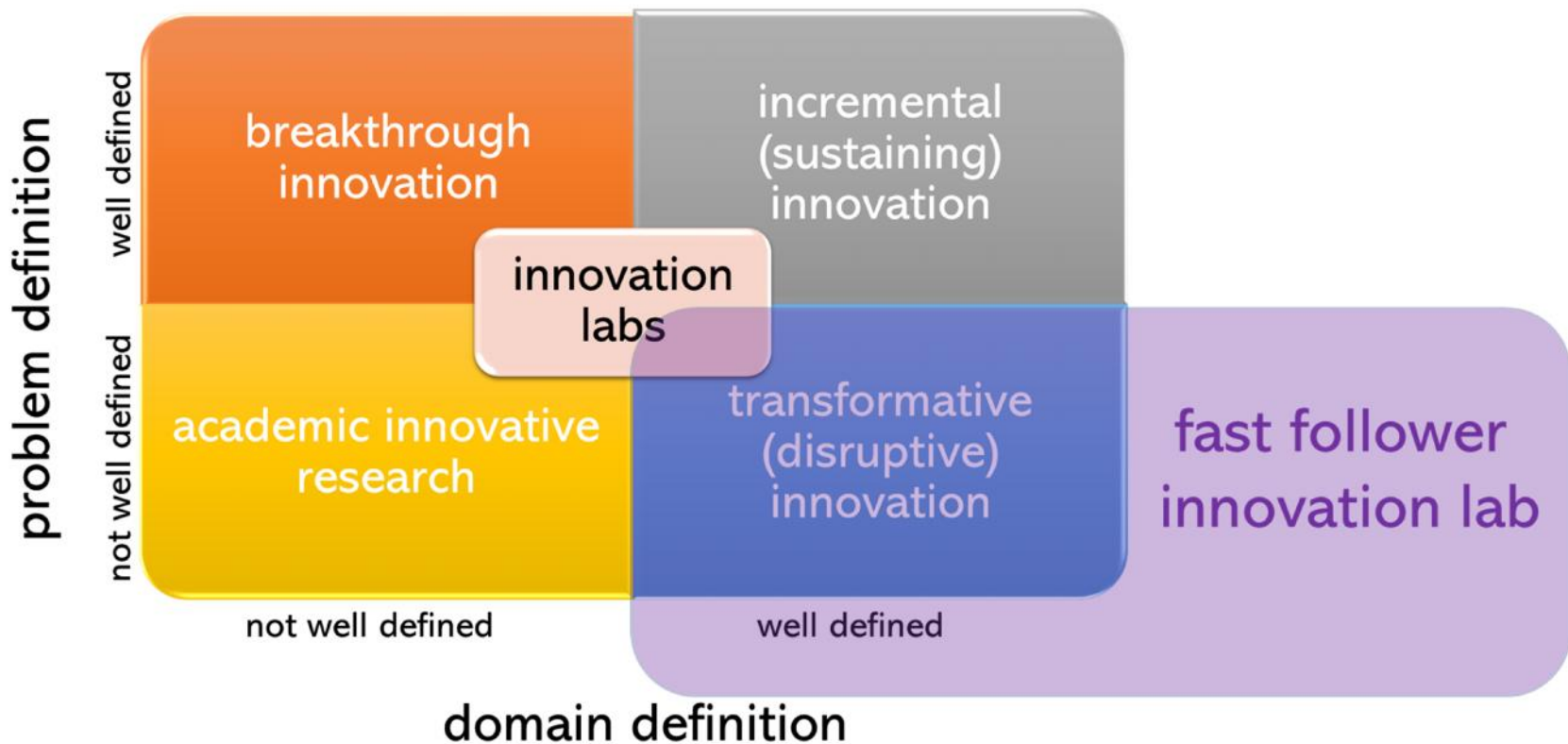
Breakthrough Innovation

- meaningful change that gives consumers something demonstrably new (beyond "new and improved").
- produces a substantial competitive edge



enterprise innovation labs

86



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The Fast Follower * “LAB”

* Fast Follower ≠ “me-too” product/service

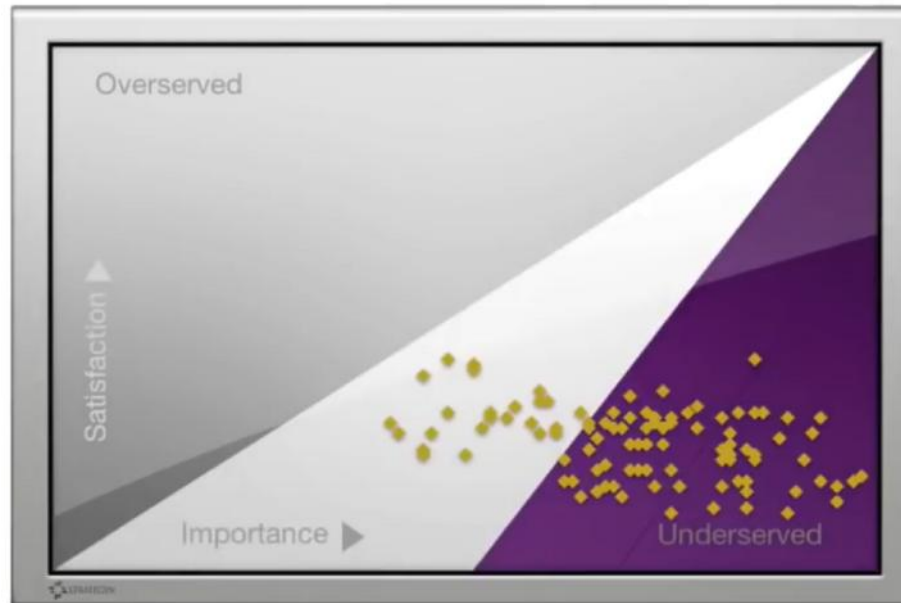


Transformational (disruptive) Innovation , not everyone can be a disruptor and not everyone needs to be a disruptor.



The Fast Follower approach allows organizations to adopt startup's or competitor's innovative product/ service into customer ecosystem already familiar with it (buying or making partnerships)

Highly underserved – new product to get the job done significantly better



Transformational (disruptive) Innovation

- introduction of a technology that creates a new industry and transforms the way we live and work (is exceedingly rare).
- often eliminates existing industries or totally transforms them.





disruptive innovations from the crazy to the unbelievable

89

***NEW ticket vending machine at a metro station at Moscow.
No need to pay money.
30 sit-ups and get a ticket***





Healthcare

Health assistant bots
Medication Adherence bots
Scheduling assistant
Hospital website navigator
Online diabetes manager
Homecare assistant
Bot for Nutritional coaching



Insurance

Automated insurance bots
Insurance shopper bot
Onboarding assistant bot
Claims advisor bot
Endorsement assistant
Claims bot



Banking

Mortgage advisor bot
Personal banker bot
Wealth manager bot
ATM assistant bot
Sales assistant bot
Online loan service bot
Account assistant bot
Paybots/bots for digital wallet



BOTS
everywhere

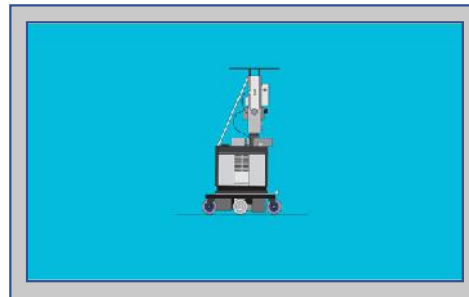
**DISRUPTIVE
INNOVATION**

DISRUPTIVE INNOVATION

autonomous robots are here



medicine



warehouses



agriculture



Retail stores



Gardening

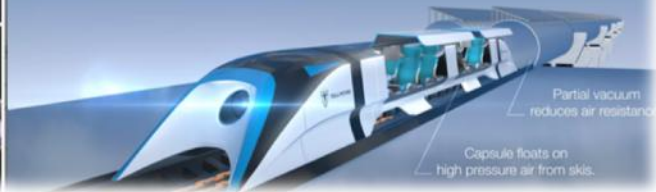
3 “crazy” guys changing the way we travel

**DISRUPTIVE
INNOVATION**

space travel



**land travel
“hyperloops”
Over 2,000 km/hr**





Organization



from silos to co-creation?
co-work?



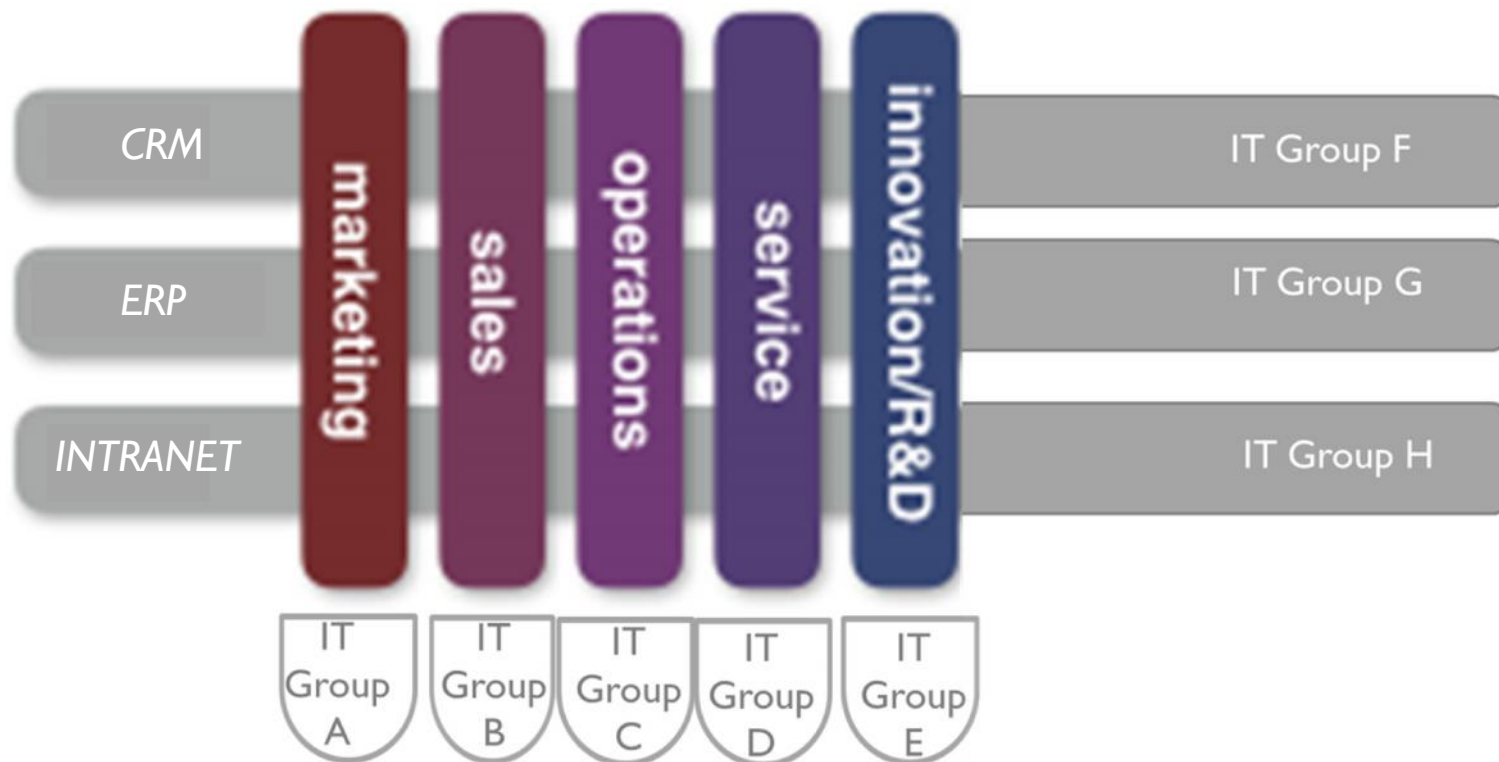
THE ORGANISATION OF THE FUTURE



Organizations today are not built for speed. They're built for stability, predictability, and control (not ideal for business transformations)

The organization of the future will be fluid; teams will be constantly evolving and optimizing for each new project.

Legacy Silos (hierarchical) of Function 1970s – today



Why Hierarchy Is Outdated: The (Long Overdue) Need For Organizational Adaptability



TALENT

Are Companies Driving Employees Away with Outdated Attitudes?

MIT Sloan
Management Review
June 2018

DECISION MAKING

Don't Let Outdated Management Structures Kill Your Company

by Vineet Nayar
FEBRUARY 2018

Can IT Be Too in Sync With Business Strategy?

SUMMER 2018
ISSUE

Tight alignment of a company's IT systems with its current strategy can hamper agility in fast-moving markets — unless the right social conditions are in place.

Tight alignment of IT (SILOS) systems with strategy restricts (impedes) agility and innovation

Aligning IT with company's strategy can :

- Cut costs
 - Improve the ability to collect data
- Enable quick, coordinated adjustments of business processes.
- Produce efficiencies (resources coordinated with processes)

Its rigidity (inflexibility) will impede (restrict) agility and innovation

we know how to handle them



Generation B
"Boomers"
1945 - 1960



Generation X
"Gen X"
1961 - 1980

can we "learn" how to handle them?



Generation Y
"Millennials" or "Gen Y"
1981 - 1995



Generation Z
"Gen Z" or "iGen"
1996 - 2015

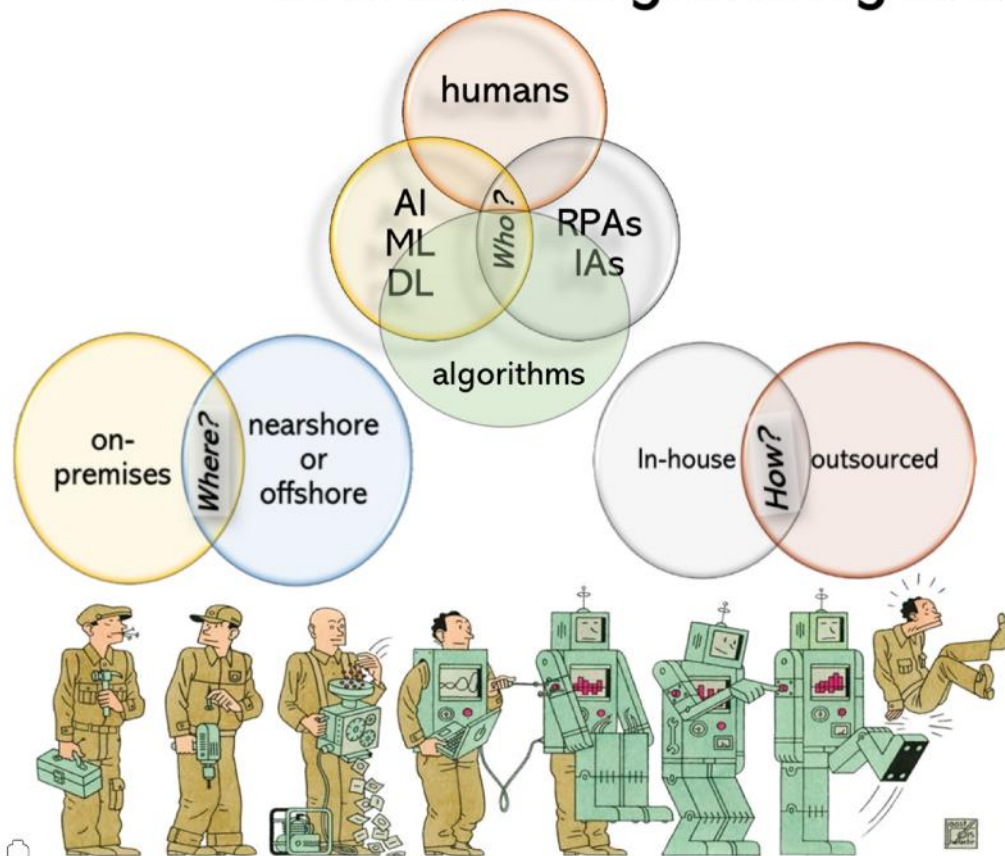
Workplace Perks That Attract the Next Generation of Bright Workers

- Collaborative **open office** space
- **PlayStation** and Table Tennis to unwind
- Fully **stocked kitchen** (Snacks, fruits, beers)
- **Pets** allowed and encouraged
- Fast and **agile teams**
- Regular **team** building **events**
- **Freedom** to be creative
- **Casual** dress & work environment
- Bonuses Via **Time Off**
- **Unlimited** Vacation
- On-Site **Gym Workout** Classes
- **Elimination** of the 9 to 5



“new” workforce and sourcing strategies choices

new technologies bring new skill and talent needs



HR is challenged to obtain new skills to fulfill the needs of new technologies and merge them into teams

Image Source: MIT Technology Review

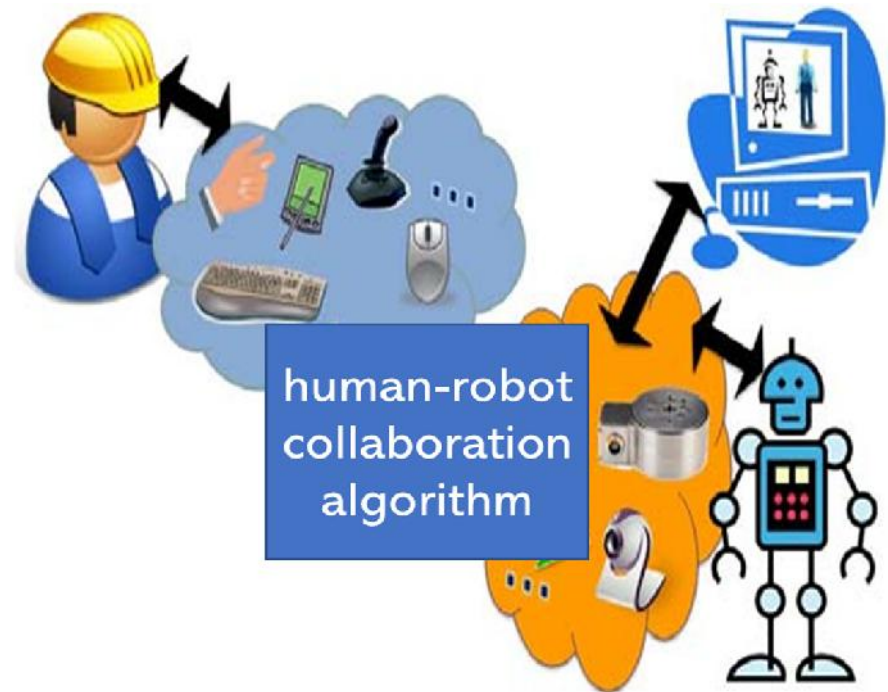
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workers will be empowered
not just by skills and knowledge,
but also by
algorithmic software robots.



The “new” workers
(people+robots)
will change the
DNA of the workforce
and the
Terroir of the company

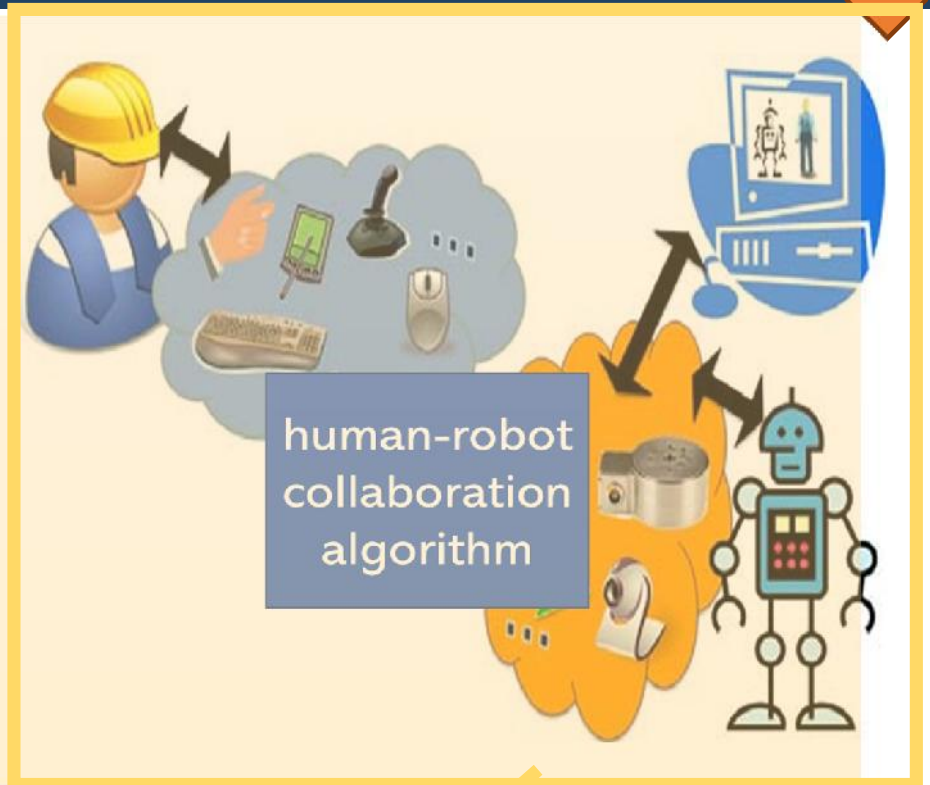


workers will be empowered
not just by skills and knowledge,
but also by
algorithmic software robots.

“ the algorithm is
our most important
employee”



YOU circa 2021

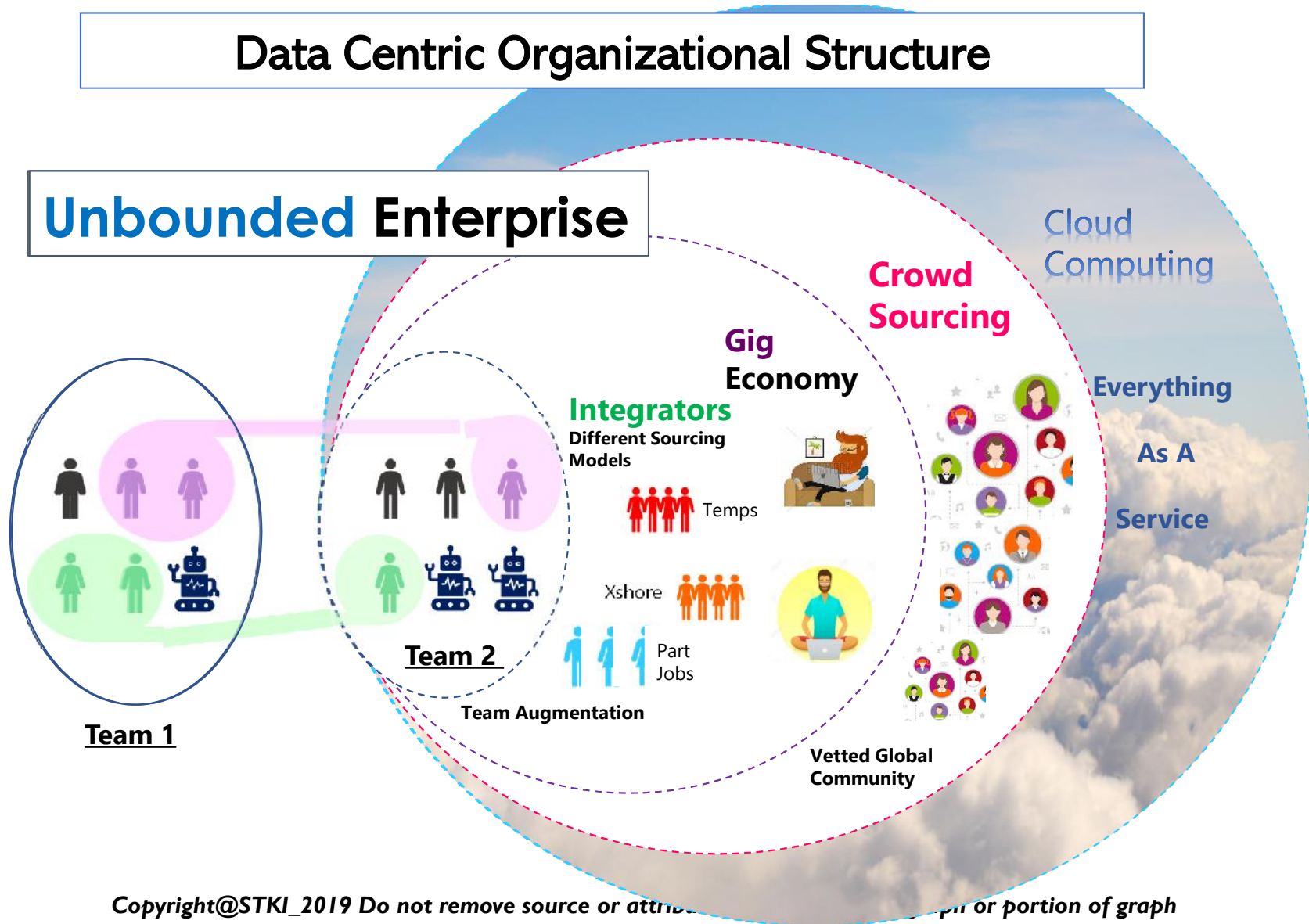


HR: “one” job description

Data Centric Organizational Structure

100

Unbounded Enterprise



Data Centric Organizational Structure

Unbounded

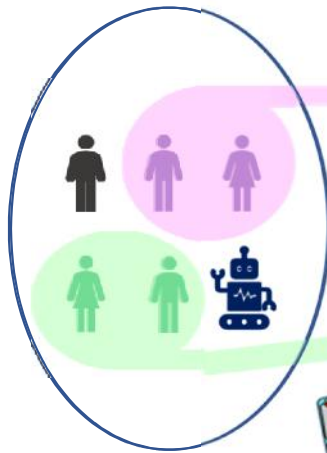
this will be explained
better during the
session
“Organizational (& IT)
Initiative ”

Cloud
Computing

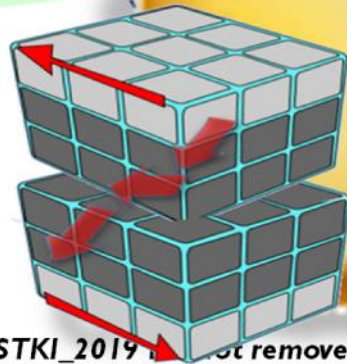
Everything

As A

Service



Team 1



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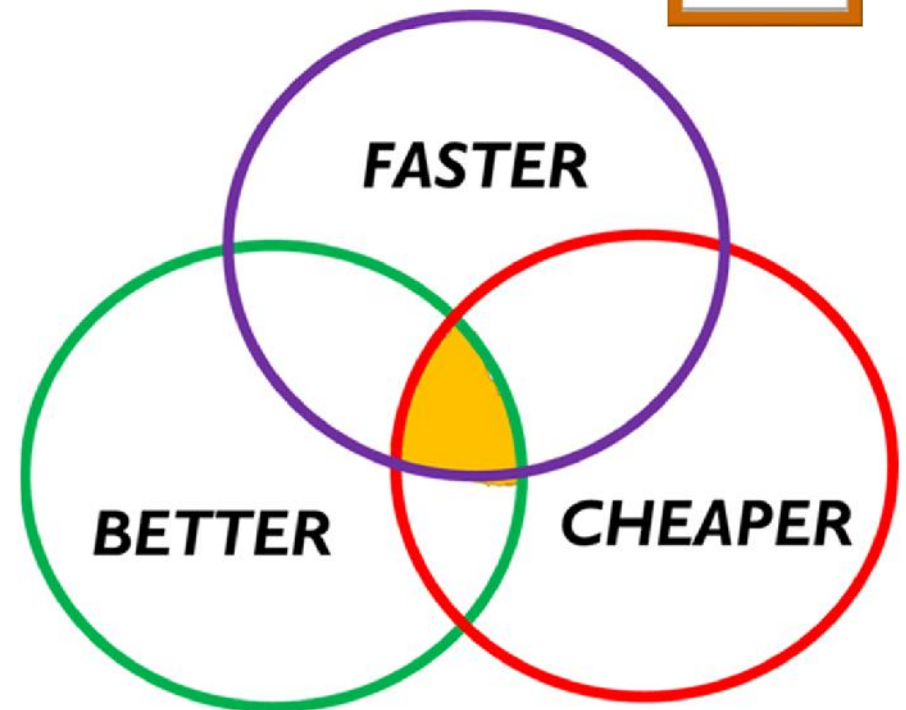


In the new world,
it is not the big fish
which eats the
small fish, it's the
fast fish which
eats the **slow fish**

Klaus Schwab
Founder and Executive Chairman
World Economic Forum



Processes



THEN



NOW



THANKS KICK - WWW.YOURKICK.COM

Business Agility
Innovation
AUTOMATING
Business Processes

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INNOVATION for 2019-2022

will be all about laying the
groundwork and implementing
AUTOMATION REVOLUTION

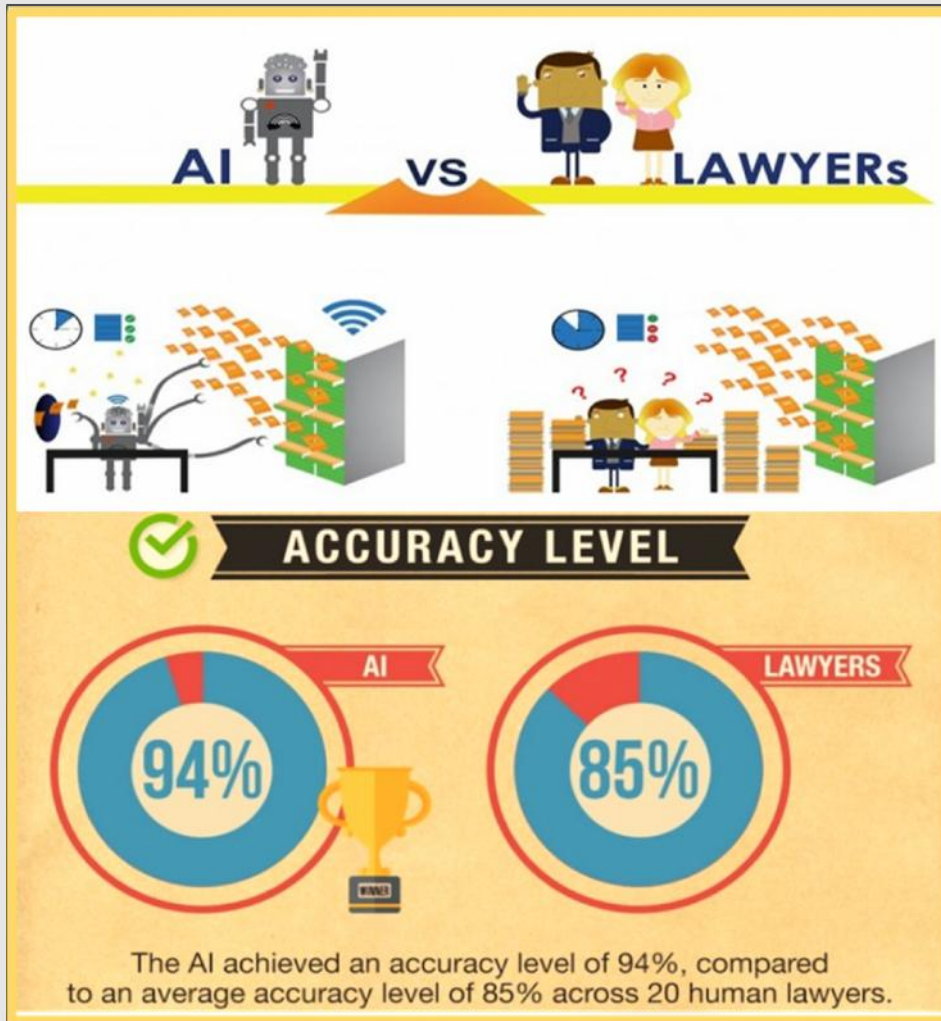


Automation in Organizations ***broad set of tools***

Machine Learning and Artificial Intelligence:
The dawning of a new paradigm in business

***This new paradigm is
changing all the rules of how
organizations operate***





Automation in Organizations

broad set of tools

- **artificial intelligence (AI-ML)**
 - will **replace professional** workers
- **robotic process automation (RPA)**
 - will **replace clerical** workers
- **orchestrators for software-defined infrastructure**
 - will **replace IT operations** workers
- **physical robots**
 - will **replace blue collar** workers



Automation in Organizations

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More News Is Being Written By Robots Than You Think

The Washington Post's robot reporter has published 850 articles in the past year

JOURNALISM
urnalism)
generated by
ams; stories
omatically by
ers.

Automation in Organizations

broad set of tools

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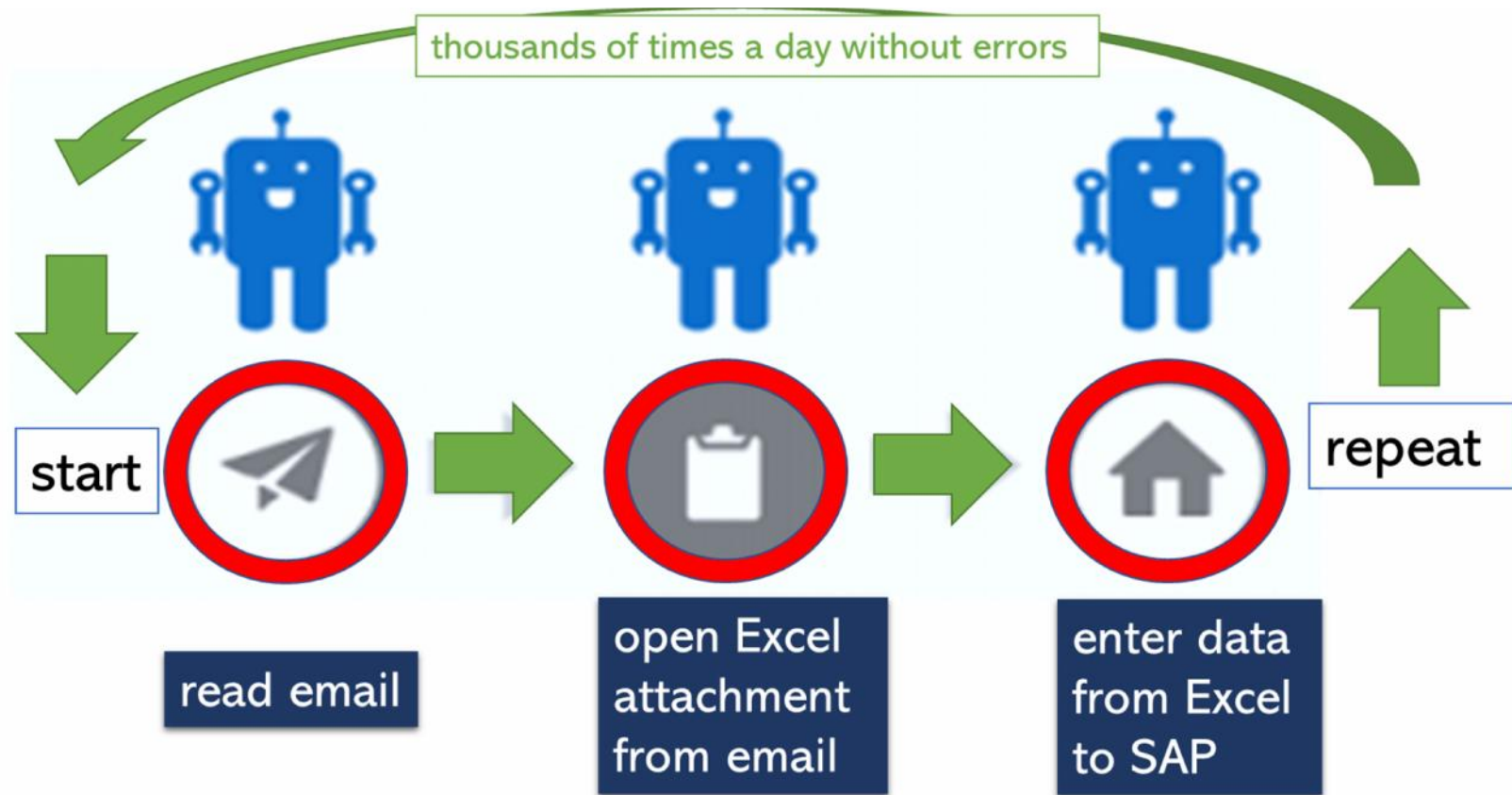
Automation in Organizations

broad set of tools

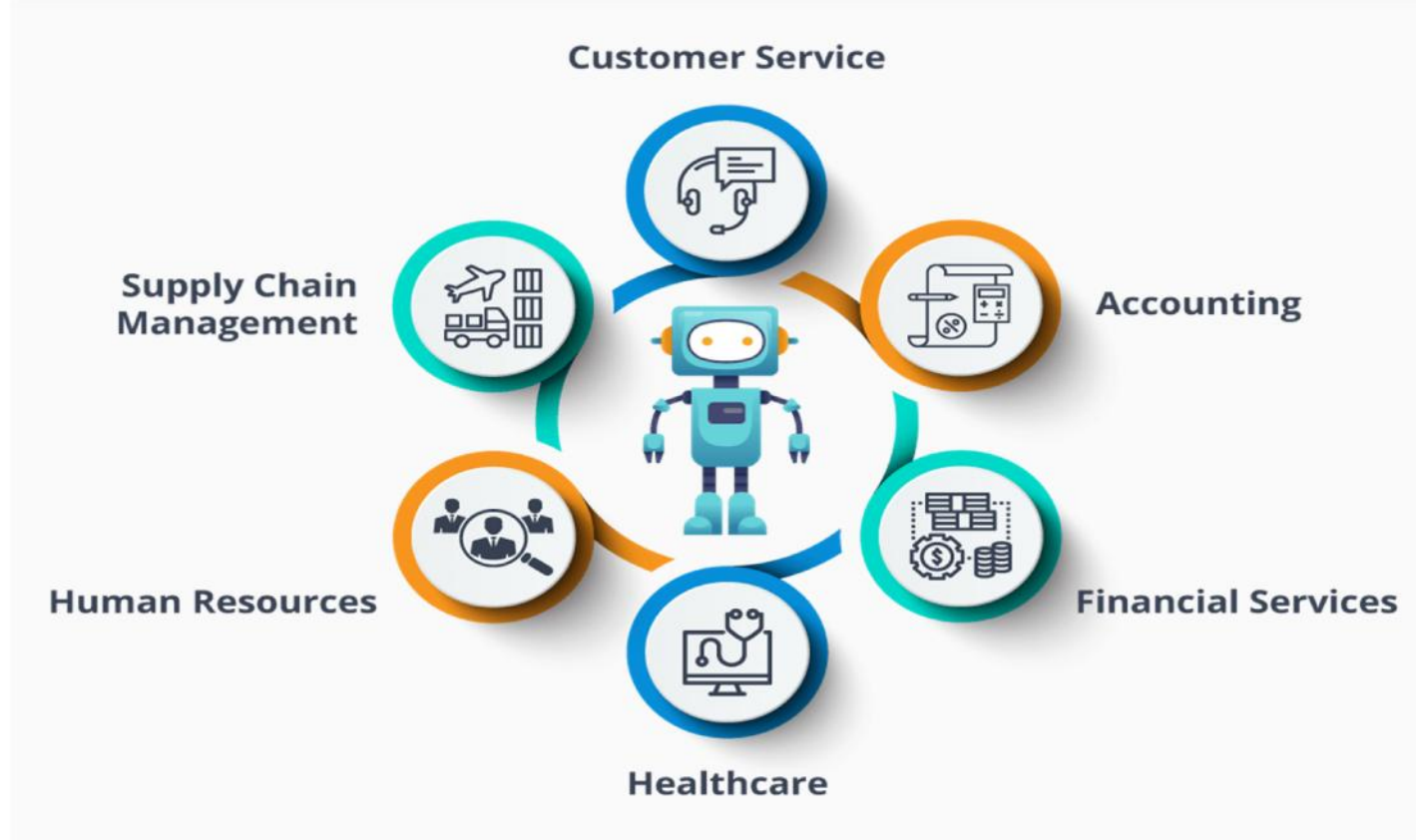
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what does RPA (robotic process automation) software do?



RPA is a “productivity” software robot that sits on top of existing systems
where can you use it?



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“RPA” marketplaces exist from several of the vendors (ready-to-deploy automation)



There are thousands of pre-built RPAs for numerous business functions, applications and capabilities from a diverse ecosystem of RPA developers and process specialists.

			Sales Change Quotation (VA22) in SAP	Finance and Accounting Finance & Accounting Clear Vendor Down Payment-F-54	Finance and Accounting Confirm Vendor Changes -FK08	Finance and Accounting Create Assets in SAP (AS01)	Information Technology Create Business Partner in SAP S/4 HANA Fiori Tile
Support Generate Application Error Logs using Splunk	Information Technology Convert CSV file to an Excel file	Finance and Accounting Convert currencies based on Exchange Rates	Sales Create Functional Location Bom-IB11	Finance and Accounting RPA pre-build processes Create General Ledger account in SAP	Finance and Accounting Create GL Account in SAP HANA	Sales Create Info Record-ME11	Sales Create Lead for Sales Campaign-Hybris C4C
Support support RPA pre-build processes Create Dashboard in Splunk Application: Splunk	Support Convert Excel To PDF Application: Microsoft	Support Convert Image to Text Application: Microsoft	Human Resources Approve Request on SAP SuccessFactors Application: SAP	Human Resources Create New Employee in Oracle HCM Cloud Application: Oracle	Human Resources Create O365 Account using Powershell Application: Microsoft	Human Resources Create Offer Letter for new hires Application: Automation An...	Human Resources Extract Word From PDF Application: Adobe



benefits for companies using RPAs



90% reduce
processing
time



up to
300%-800%
ROI



70% reduction
of manual task



24/7
maximum
processing
capability

pwc.p



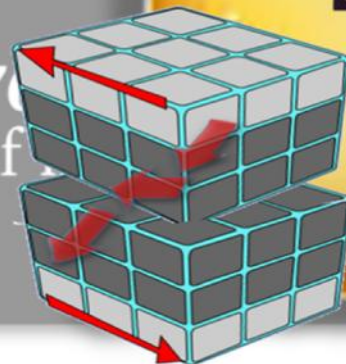
benefits

PAs

90%
proces
time

-800%

this will be
explained better
during the session
“Smarter
Enterprises
Initiative”

70
ofium
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pwc.p

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Supply Chain



Integrated approach in managing the different phases to deliver an end-product/service to a customer




Today in most corporations departments work in silos (with bridges between them,) without thinking about their service as being part of an integrated ecosystem.



Goal is to design a fully integrated chain of supply of services that involves back office, middle office, business products developers, finance, IT, etc




Innovation lab should focus on tools : OpenAPIs, AI, BPM, RPAs, IoT, advanced analytics, blockchain, etc




Goal is to design a fully integrated chain of supply of services that involves back office, middle office, business products developers, finance, IT, etc



you need to adopt
Cloud Native Computing



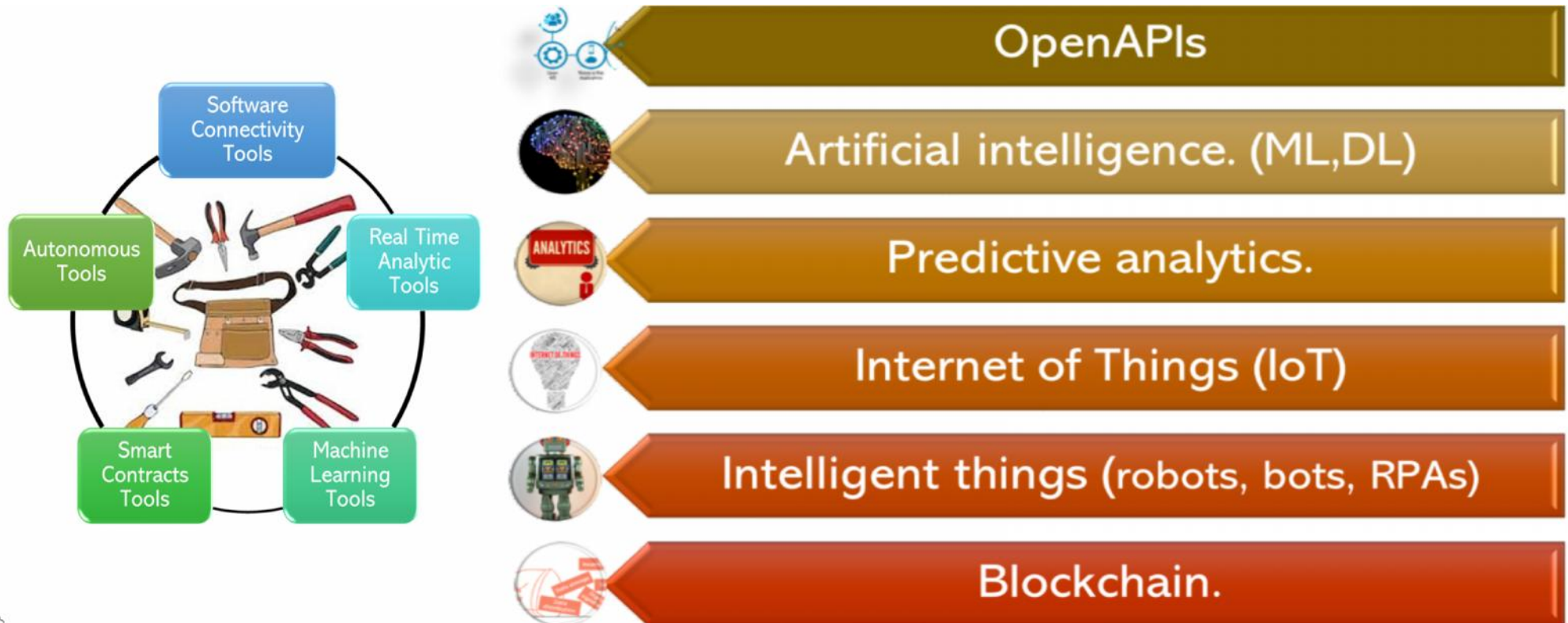
open source, dynamic
environment based on public,
private, or hybrid clouds



containers, service meshes,
microservices, immutable
infrastructure, and declarative APIs



Innovation lab should focus on **TOOLS** needed for a “service” or “product” supply chain:



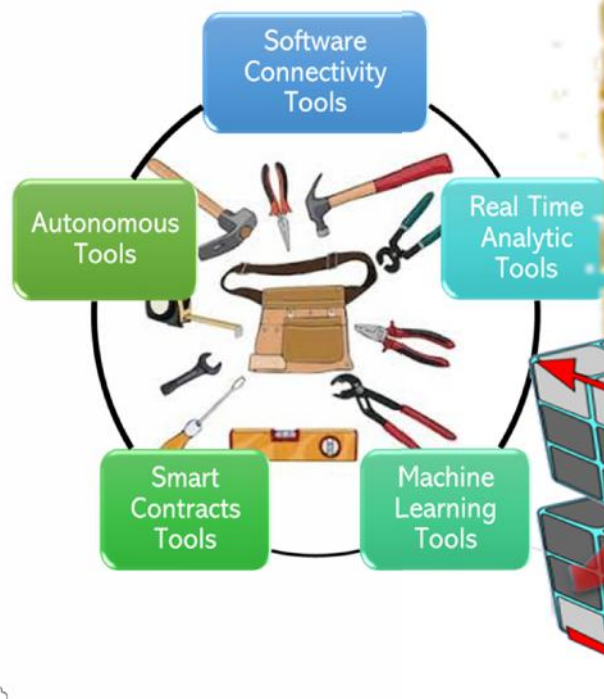


Innovation
a

needed for
chain:

117

this will be explained
better during the
session
“New Technologies
Initiative ”



e. (ML,DL)

ytics.

s (IoT)

ts, bots, RPAs)

Blockchain.

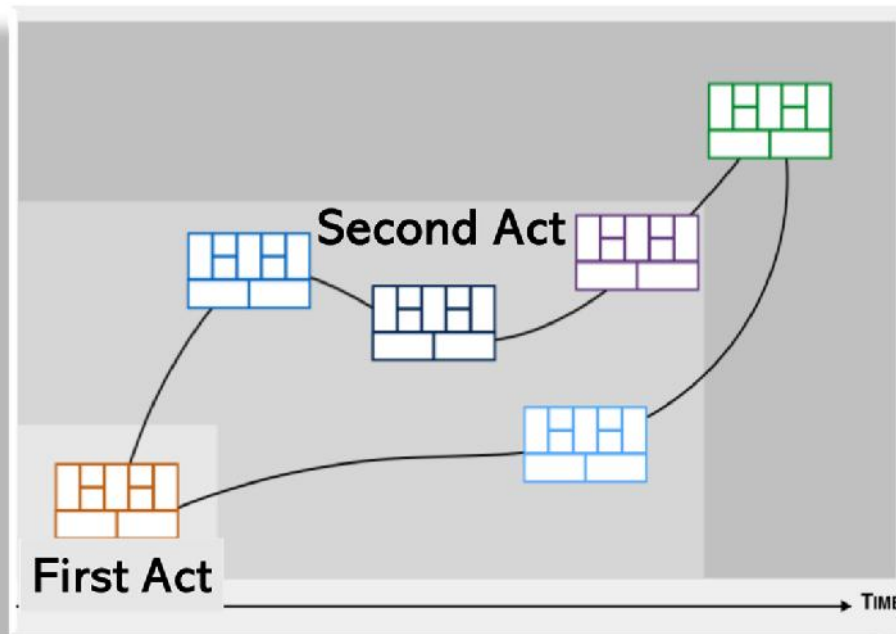


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Market



With each new buying opportunity, consumers can and often do **switch to better alternatives**

Enterprises should recognize the need for new business models and markets

**This is called the
COMPANY'S SECOND ACT**





INNOVATION

Finding Your Company's Second Act

**Harvard
Business
Review**

by Larry Downes and Paul Nunes

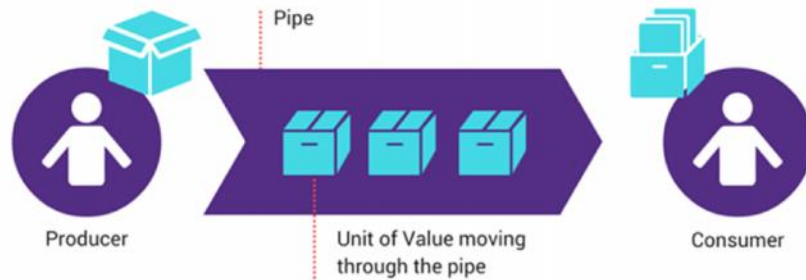
FROM THE JANUARY FEBRUARY 2018 ISSUE

**MOST SECOND-ACT SURVIVORS
LAUNCH NOT A SINGLE PRODUCT
BUT, RATHER, AN ECOSYSTEM.**

Build a platform, not a
product
second-act survivors
launch not a product but an
ecosystem,
connecting customers,
suppliers and others,
also deriving
**revenue from platform
services**
(payment processing, curation, data
analysis and quality assurance)



PIPELINE ECONOMIC BUSINESS MODELS



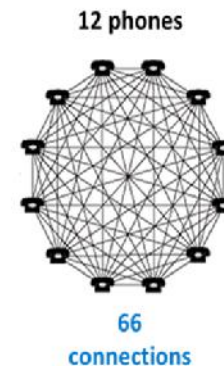
still a pipeline economic model



**“aggregators / platform economy”
has different business rules than
“the old pipeline economy”**

PLATFORMS LEVERAGE NETWORK EFFECTS
More users = more value = more users...

... this implies ...

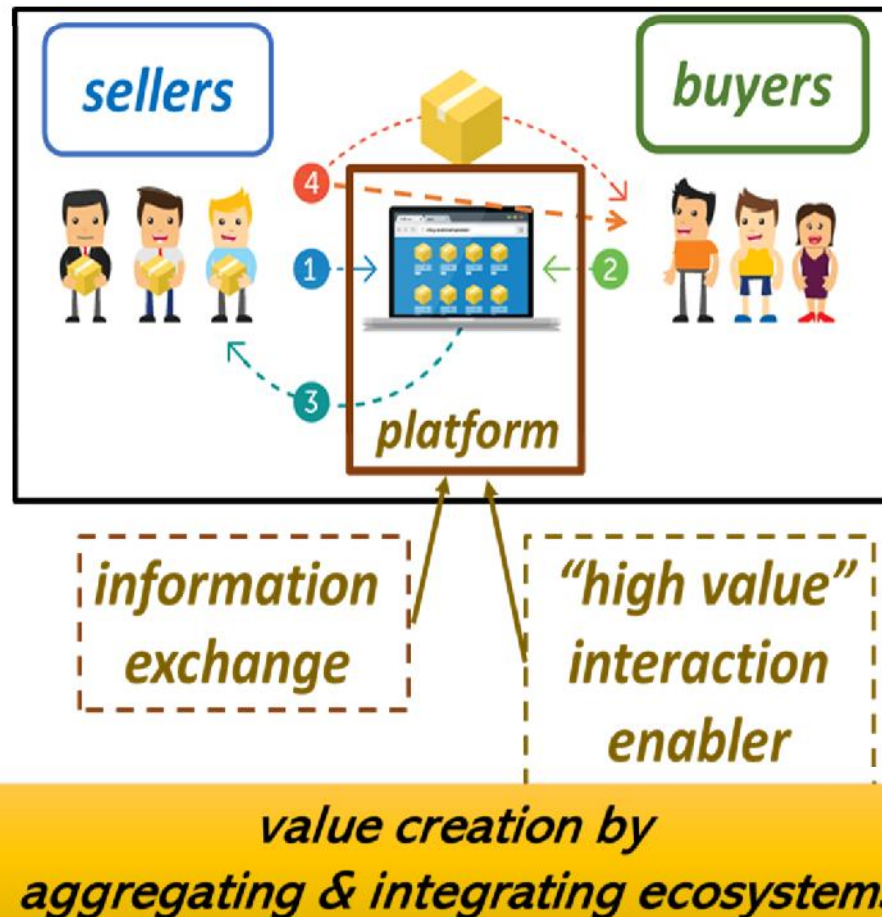


***platform
has to create value
in a
world of
digital ecosystems***

***digital ecosystems require
new mindsets and resource allocation.***



PLATFORMS are value added AGGREGATOR BUSINESS MODELS



**"aggregators / platform economy"
has different business rules than
"the old pipeline economy"**

PLATFORMS LEVERAGE NETWORK EFFECTS
More users = more value = more users...

**platforms are the
lifeblood that enables
ecosystem partnerships**

**successful platforms
should meet the needs
of the
collective ecosystem**



Prof Jean Tirole and his team
re-wrote the

*“new economy”
rules for
“aggregators-platforms”
business models*

2014 Economics Noble Prize

Platform Competition in Two-Sided Markets

Jean-Charles Rochet* Jean Tirole[†]
December 13, 2002

Abstract

Many if not most markets with network externalities are two-sided. In networked platforms in industries such as software, portals and media, payment systems and the Internet, each “party” sides of the market on both sides. Accordingly, platform owners derive such externalities to their business model, that is to say they can’t make side while making money overall. The paper builds a model of platform competition with two-sided markets. It studies the determinants of price allocation and each user surplus for different governance structures (profit maximizing platform and

“for his work on antitrust
regulation, market power
two-sided platforms”

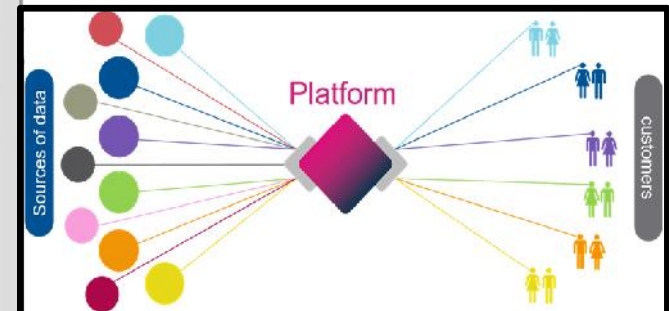


Pipelines, Platforms, and the New Rules of Strategy



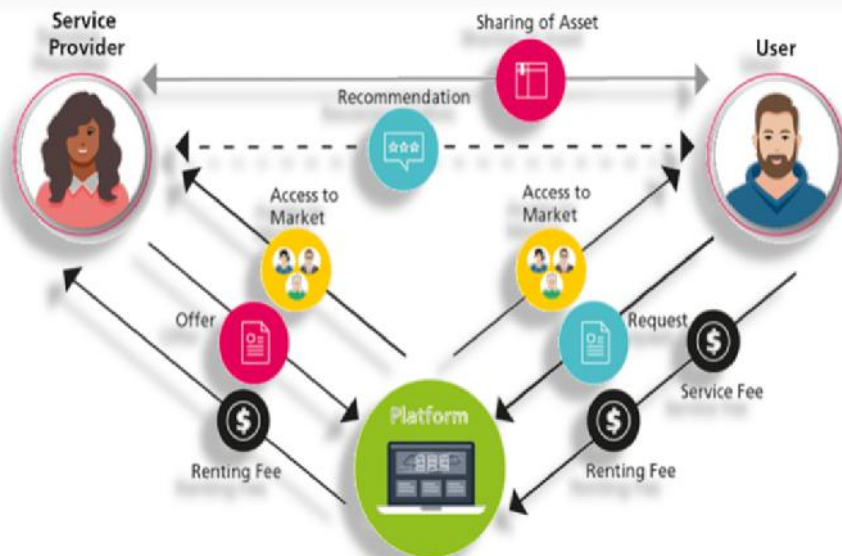
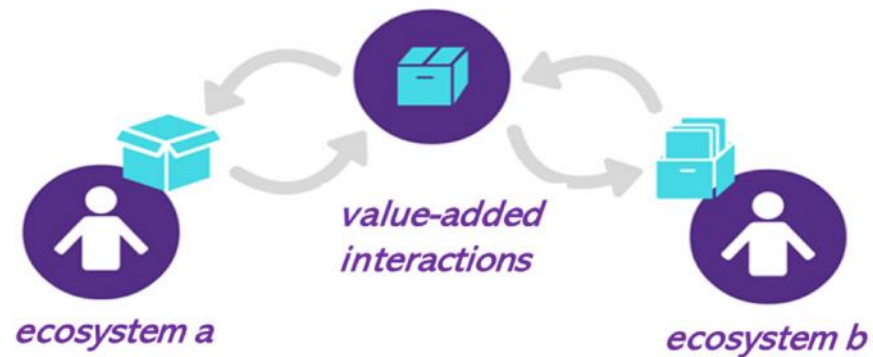
by Marshall W. Van Alstyne, Geoffrey G. Parker, and Sangeet Paul Choudary

FROM THE APRIL 2016 ISSUE

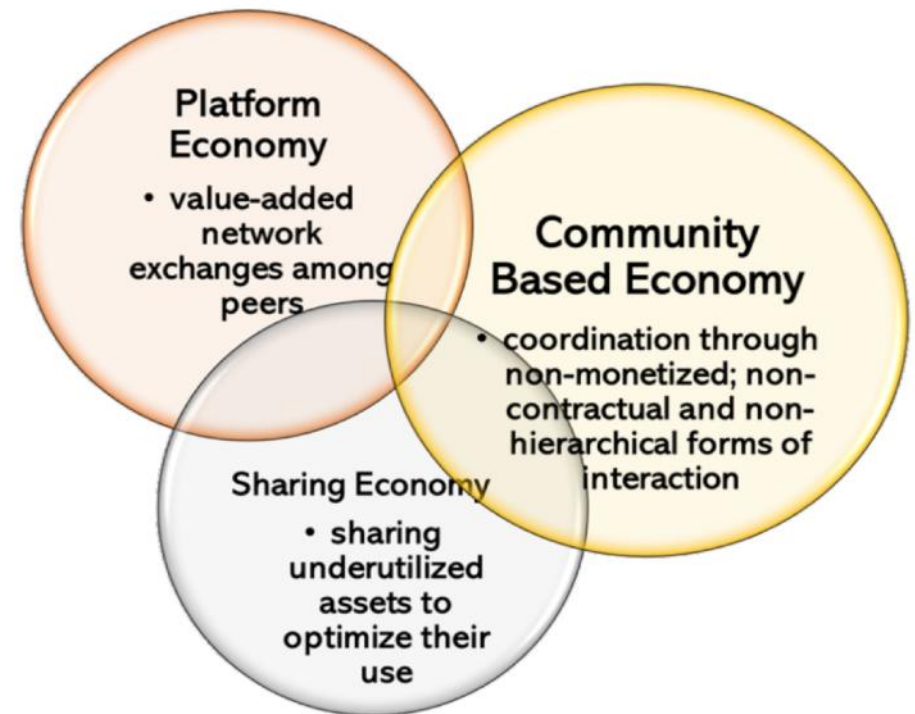


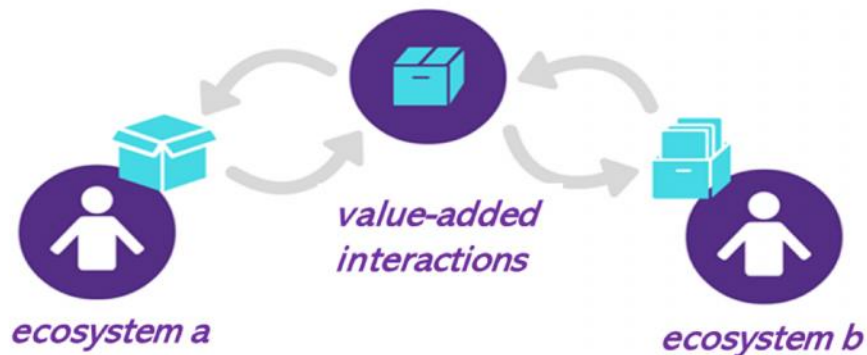
Platform Manifesto by the
“MIT Initiative on the Digital Economy”.





*“aggregators “combine
“platform, community-based
and sharing economies”
in order to give
value added interactions*





Platform Design

1. User roles and relationships to the platform
2. Customer journeys of interacting user roles
3. Design of the core interaction
4. Platform priorities leveraging the Pull-Facilitate-Match framework
5. Platform design leveraging the platform canvas

Launch and Growth

1. Solving chicken and egg problems of platform launch and early adoption
2. Building organic virality
3. Activation of users on the platform
4. Behavior design for repeat usage
5. Incentive design and creation of feedback loops
6. Metrics definition to track platform growth and usage

Monetization

1. Laying out key sources of value generated by the platform
2. Defining key points of value capture
3. Determining viability of monetization model: Evaluating impact of value capture on network effects and platform's ability to retain transaction on-platform

how to build an "aggregator" platform

Platform Management

1. **Open Business Models:** Scoping out openness of the platform
2. **Platform Governance:** High-level design of the reputation system and the progression logic that ties user actions to the rights and reputation
3. **Determining quality and relevance:** Designing the tools of curation (editorial, algorithmic and social)

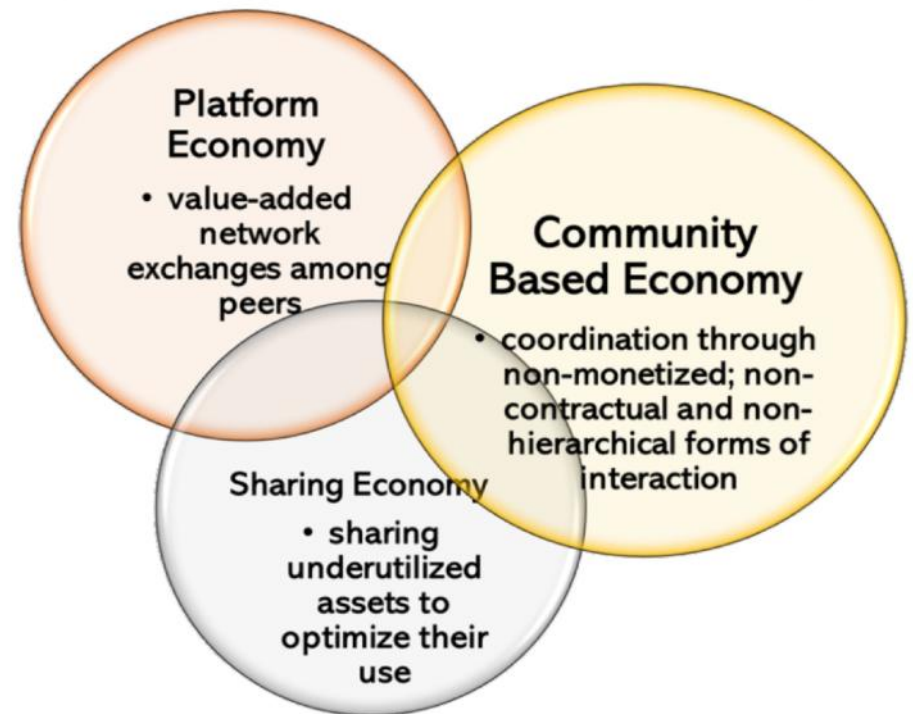
Data Strategies

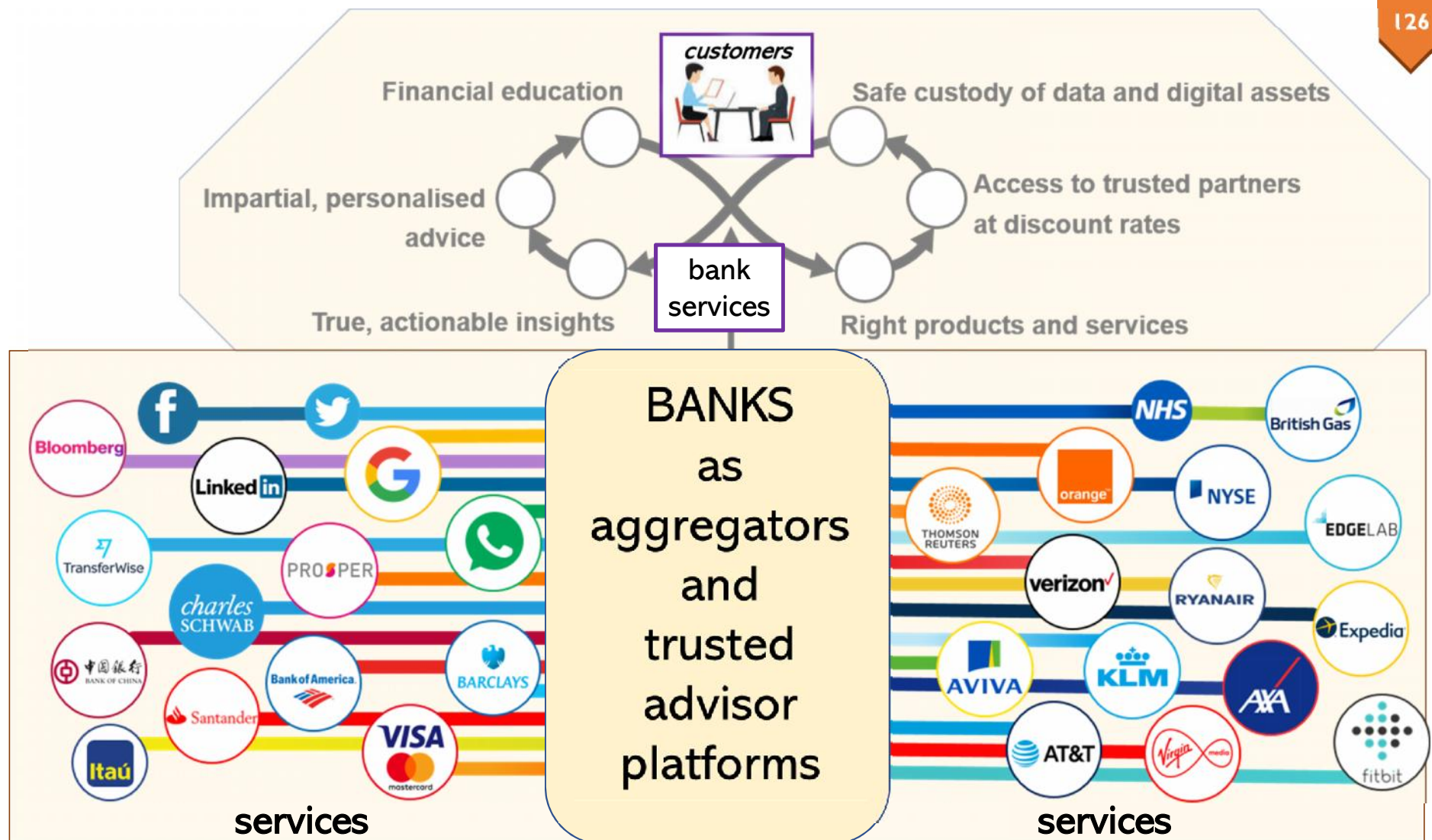
1. **Data logic:** Laying out data model for the core interaction between platform users
2. **Data acquisition:** Crafting data acquisition strategies to create value when the platform starts off
3. **Matchmaking:** Solving search and discovery on the platform

Platform Health

1. **Metrics:** Designing core metrics that help track platform health and its ability to enable interactions
2. **Points of Failure:** Key points of failure which break the core interaction on the platform

*"aggregators "combine
"platform, community-based
and sharing economies"
in order to give
value added interactions"*





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It's a lot *easier* for an organization to *adopt new words* than it is to *actually change* anything.

REAL CHANGE IS
UNCOMFORTABLE.

If it's *not feeling uncomfortable*,
you probably *just adopted new words*

Innovation Initiative
adapt, disrupt, transform

Dr. Jimmy Schwarzkopf

jimmy@stki.info

054 70 000 20

09 790 7000

