AUTODESK. UNIVERSITY

Design Sprint, Agile methods and a case story from a manufacturer

Thomas Nagel

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Customer Outcome Executive | Autodesk

https://www.linkedin.com/in/thomas-nagel-digital-leader/

About the speaker

Thomas Nagel

I want to support people, teams and companies to grow and to learn in the digital world. To embrace the opportunities and potentials arising from the digital transformation is one of the greatest challenges we face both in companies and in society.

I am passionate about innovation processes. For me, this means to enable companies and in particular teams working on new visions and challenges on their innovation journey. My skills refer especially to various methods, like Design Sprints, Lean StartUp and Scrum combined with feasible approaches.

Supporting companies to transform their corporate culture and to support them on their digital innovation journey is his mission.

valuable software
individuals
working software
work together
interactions
effective
responding to change
AGILE
continuous delivery
technical excellence
efficient
customer collaboration
software development
simplicity
satisfy the customer

Agenda

NEW CHALLENGES REQUIRE NEW SKILLS

Yesterday's know-how provides few answers to the questions of today and tomorrow!

New skills to learn!

Allow new ways of thinking, structures and communication!

Encourage a cultural change to become an agile company!

BEST PRACTISES FOR AGILE CHANGES

How to capture and develop knowledge I a very simple way?

Getting Inspired On The Autodesk University

Just Do It! Starting a new procedure for Brownfied Modifications?

Agile Implementation of modern cloud collaboration!

WELCOME TO THE SPRINT

Map the Problem, Ask “How might we…?”, Vote!

Sketch different solutions!

Decide On Best Solution!

Build a Prototype!

Test and Validate with 5 customers!

WHAT COMES NEXT?

Business Model Definition!

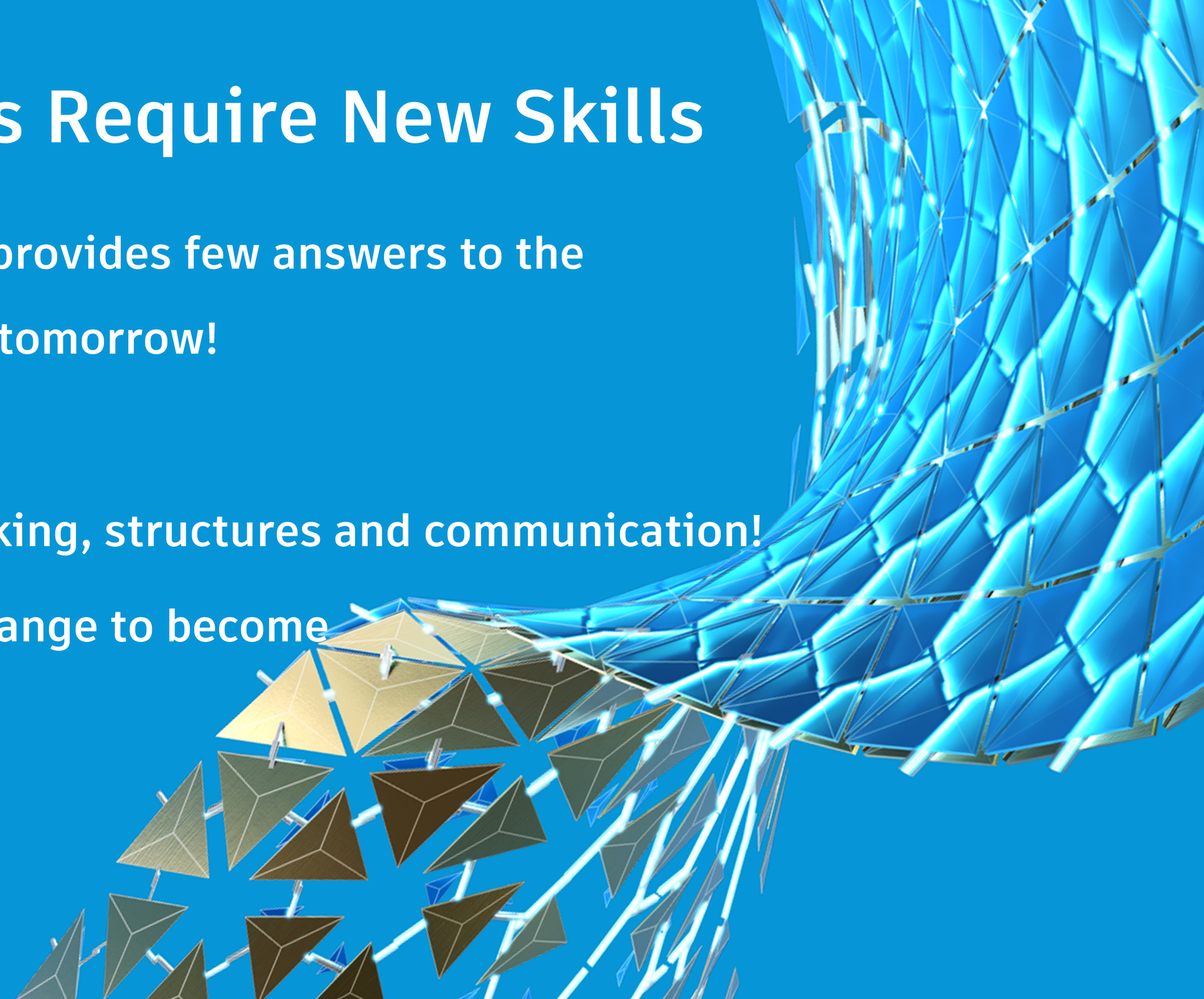
Business Model Canvas!

Lean Startup - Build, Measure, Learn

Agile Project Management (Scrum)

New Challenges Require New Skills

- ✓Yesterday's know-how provides few answers to the questions of today and tomorrow!
- ✓New skills to learn!
- ✓Allow new ways of thinking, structures and communication!
- ✓Encourage a cultural change to become an agile company!




Higher Quality
Reduced Lead Times
Increase Customer Satisfaction
Reduced Costs
Photo credit


VIZOR

A BRAVE NEW WORLD

Thomas Nagel talks to Jonathan Rowland, World Cement, about Claudius Peters' latest steps into the digital revolution.

German-based manufacturer, Claudius Peters, was awarded the Innovator of the Year

Generative design

In contrast with traditional design, whereby a designer forms the idea in their mind and then

designer can then select the solution that best suits their needs. In short, it provides algorithmic augmentation to human design.

because that is where the component to be designed will be attached to another component).


V
U
C
A
VOLATILITY
UNCERTAINTY
COMPLEXITY
AMBIGUITY

THE FASTEST GETS IT ALL

The digital world is becoming faster, the development of business models must adapt.

1

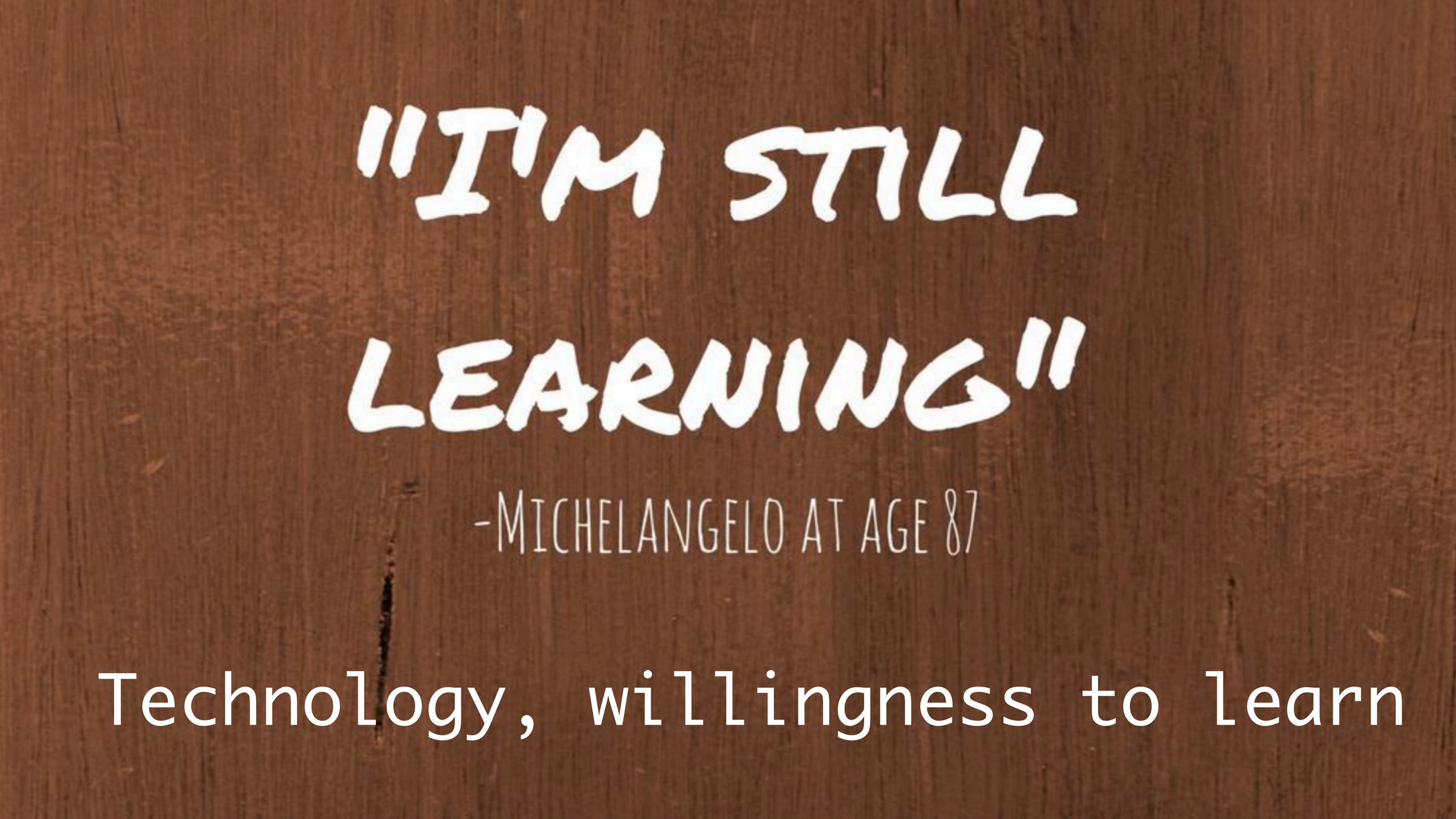
"IF YOU CAN SHOW ME THE BUSINESS CASE, IT'S ALREADY TOO LATE!"

– Bill Gates

2

"NO BUSINESS PLAN SURVIVES FIRST CONTACT WITH THE CUSTOMER!"

– Steven Blank, The Startup Owner's Manual

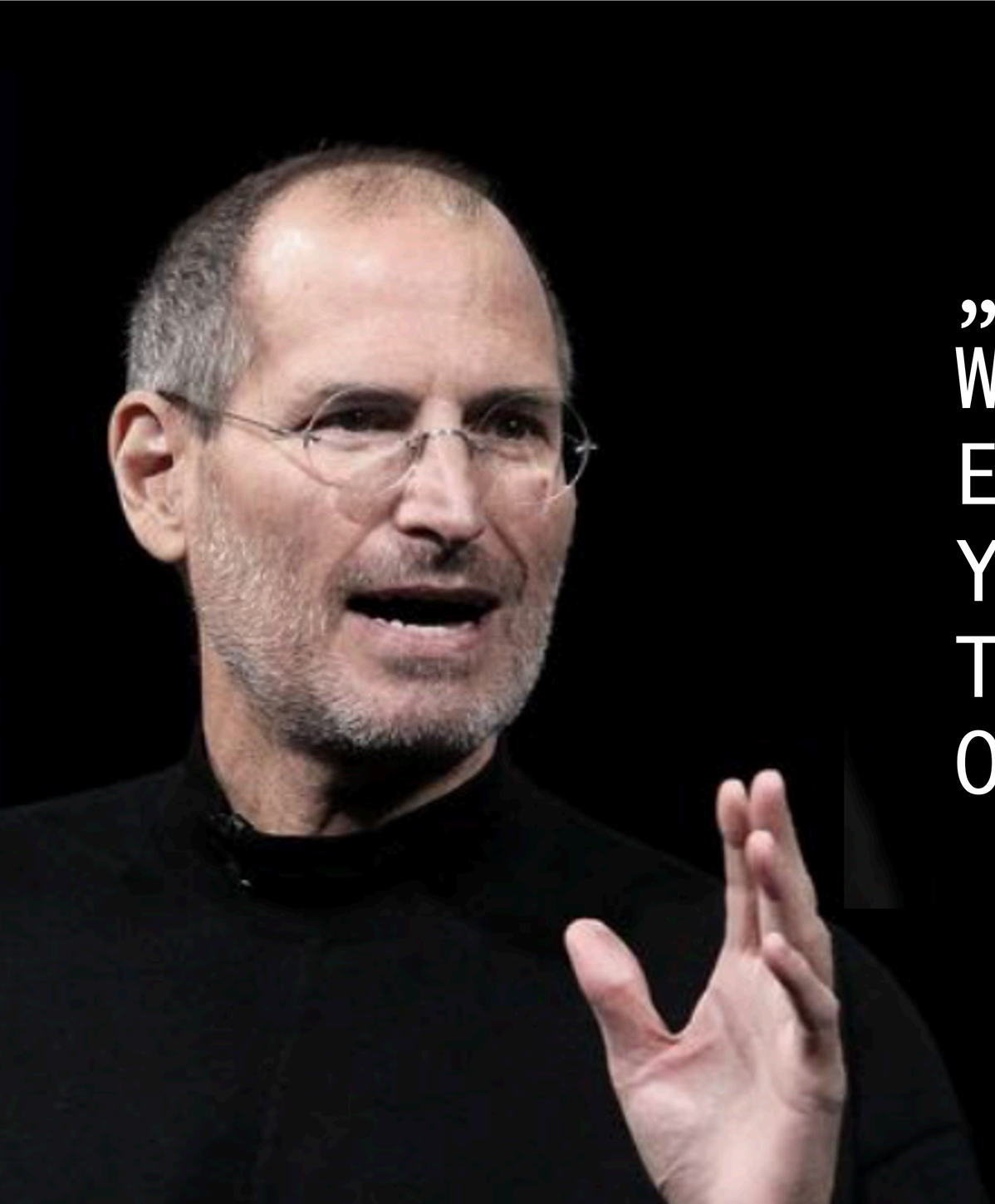


Technology, willingness to learn

It's time to detonate a booster rocket!

The digital transformation
is not a project,
but an inner attitude.

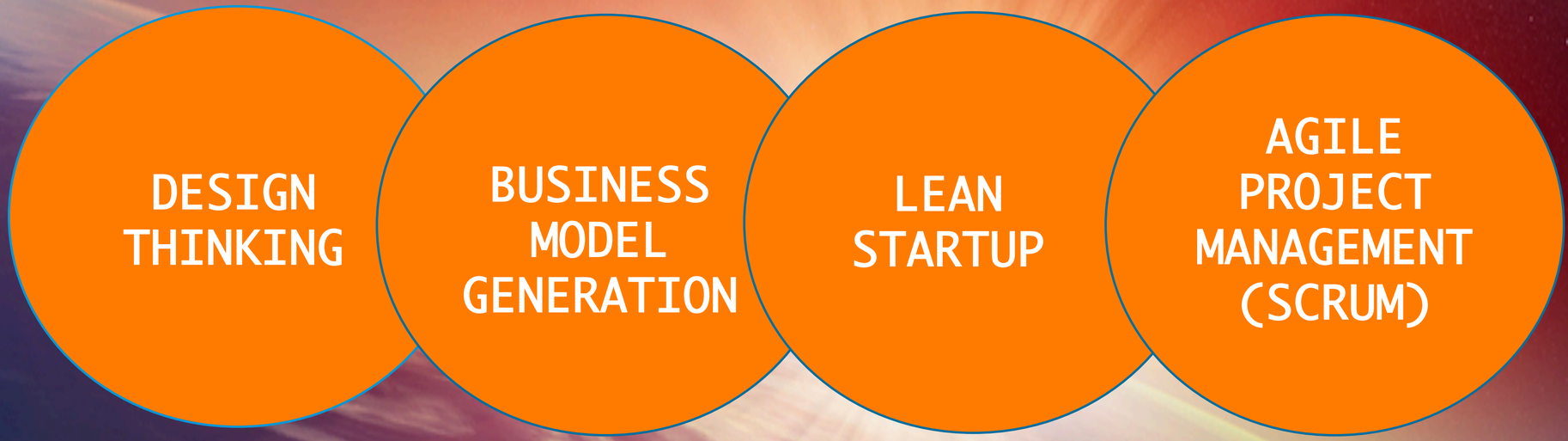
The electric light did not come from the continuous improvement of candles



„YOU HAVE TO START WITH THE CUSTOMER EXPERIENCE AND WORK YOUR WAY BACK TO TECHNOLOGY – NOT THE OTHER WAY AROUND!“

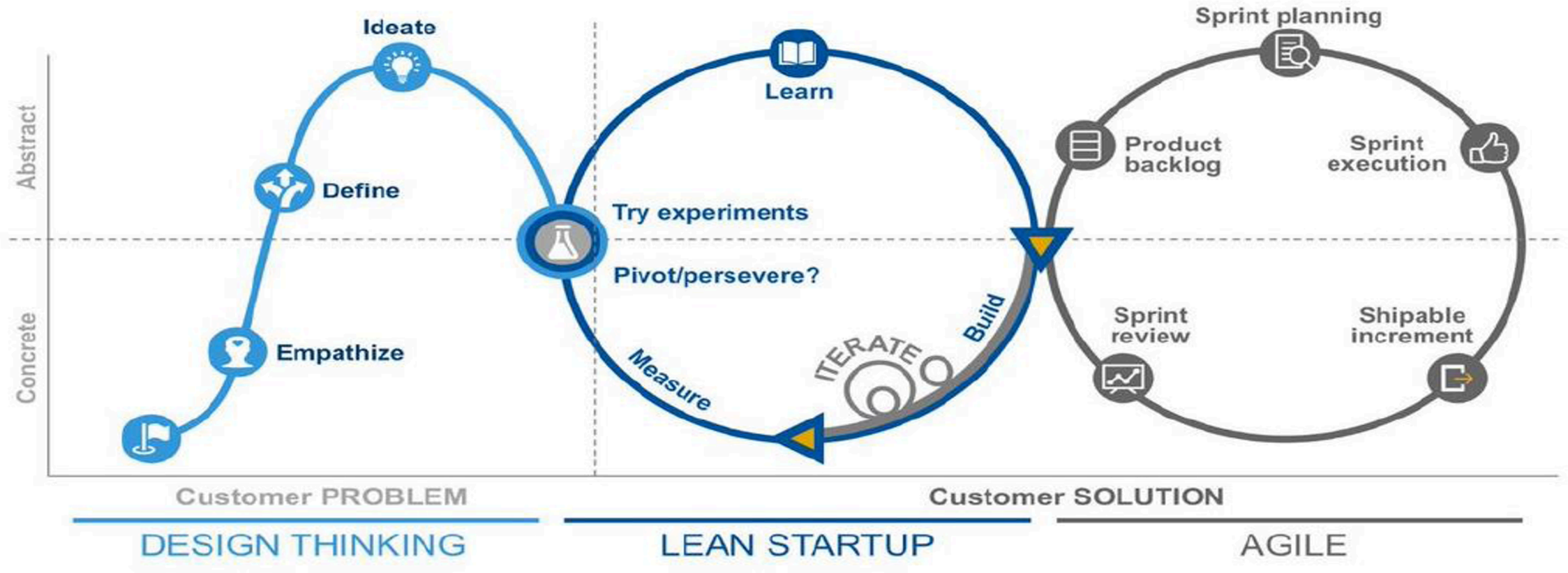
// Steve Jobs

Agile Methods



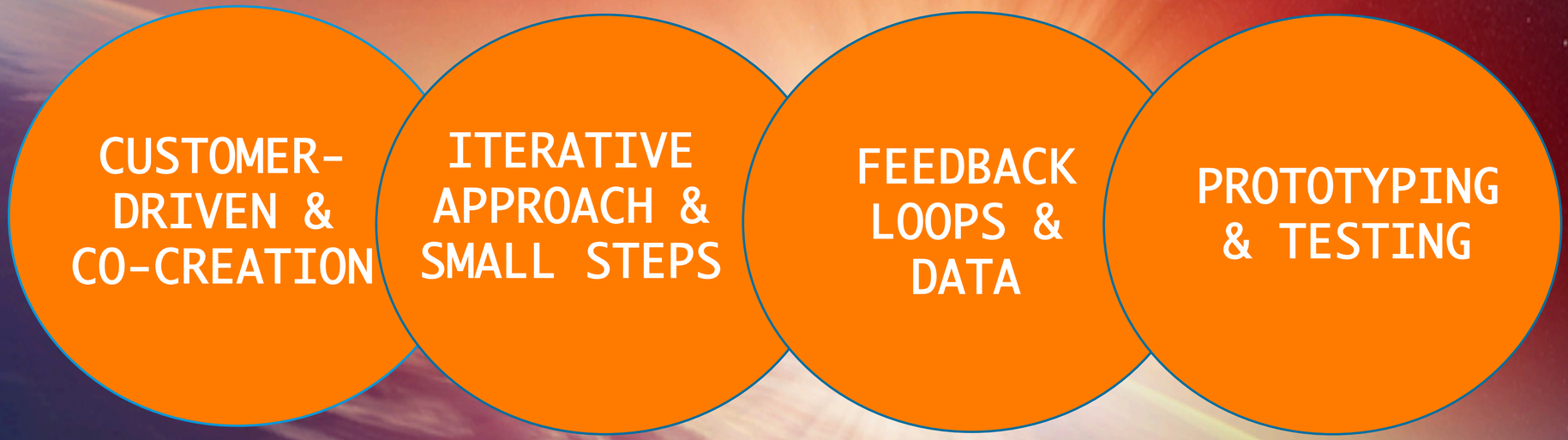
Wishfulness Profitability Proof of Concept Realisation

Design Thinking, Lean Start-up, and agile project management can be combined.

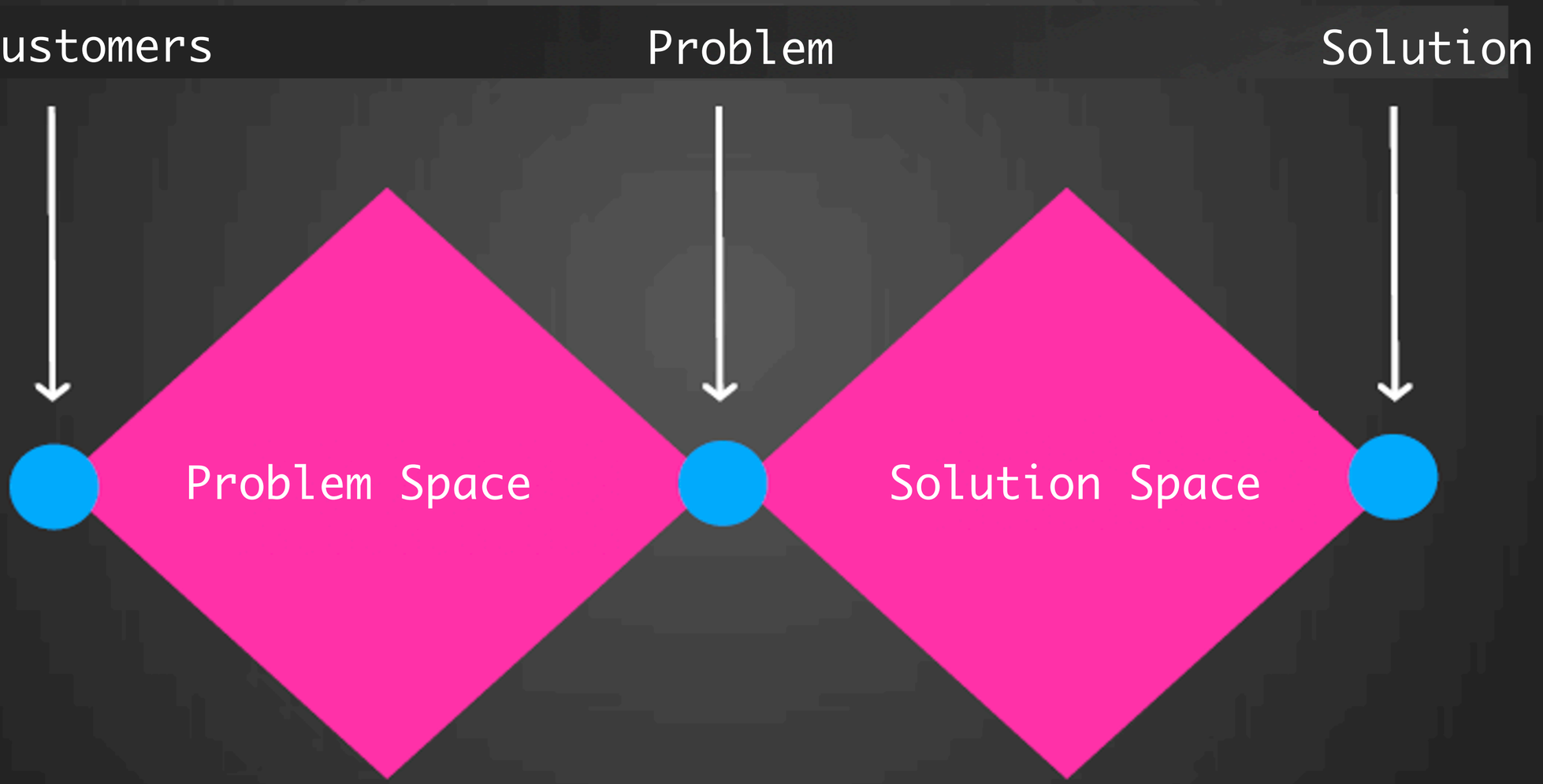


Source: Gartner

Agile Principles



DESIGN THINKING



INNOVATORS' CLUB: A NETWORK FOR VISIONARIES

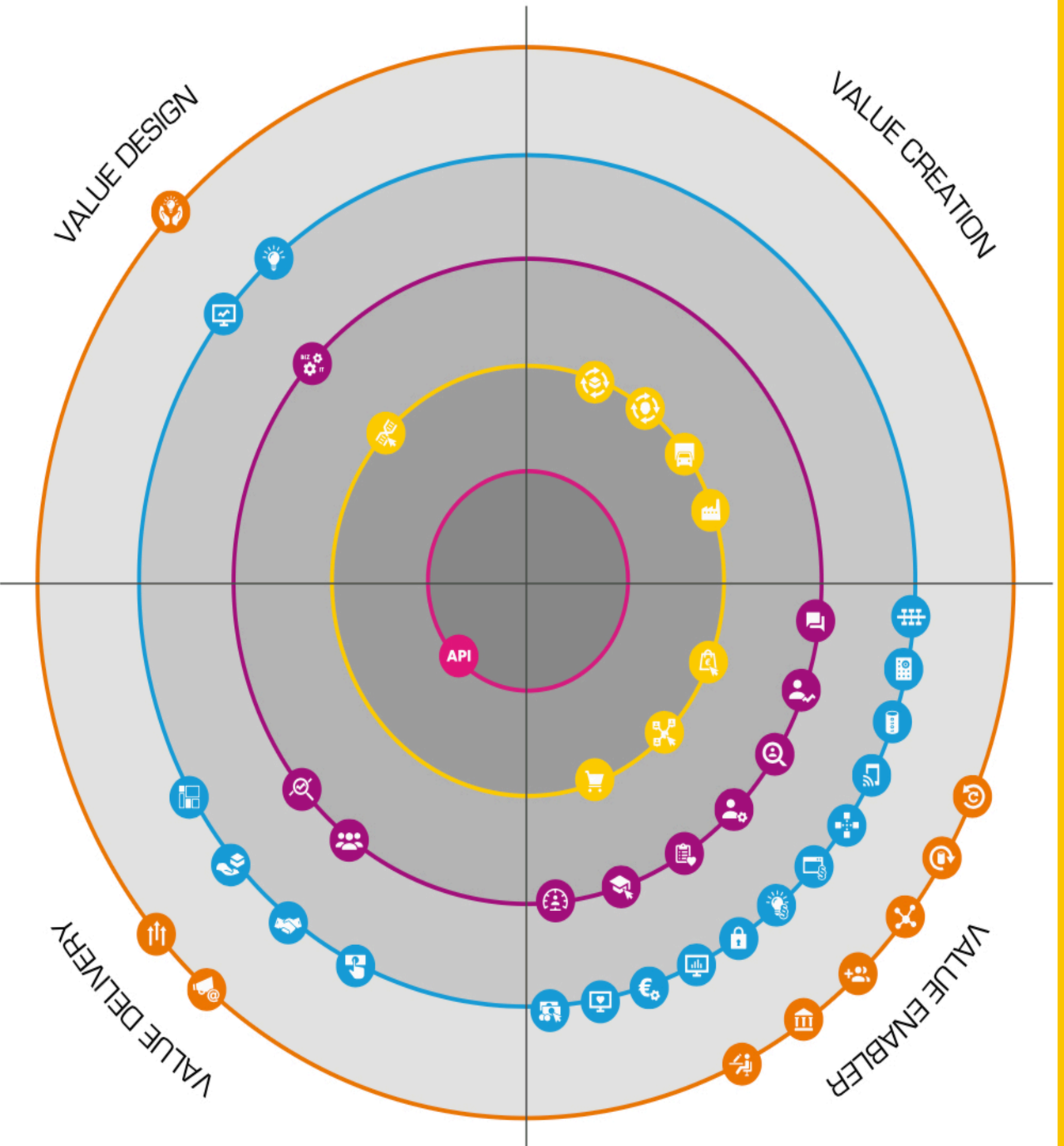
The Innovators' Club is a cross-industry innovation network with a diverse range of members. Under the auspices of SALT AND PEPPER, it organises quarterly conferences with selected partners, providing a forum for interdisciplinary discussion. Benefit from the experiences of other companies who are also getting to grips with the issues of digitalisation and the Fourth Industrial Revolution (4IR).

"Modern designers and engineers must adapt to modern ways. Increasingly, they have to understand themselves as a data manager and programmer. Modern design and engineering work requires a complete new set of digital skills. Not everybody is already on board. But we try to convince them that we have to change to avoid extinction."

Thomas Nagel, Claudius Peters

#WednesdayWisdom #CementWisdom

WORLD CEMENT®

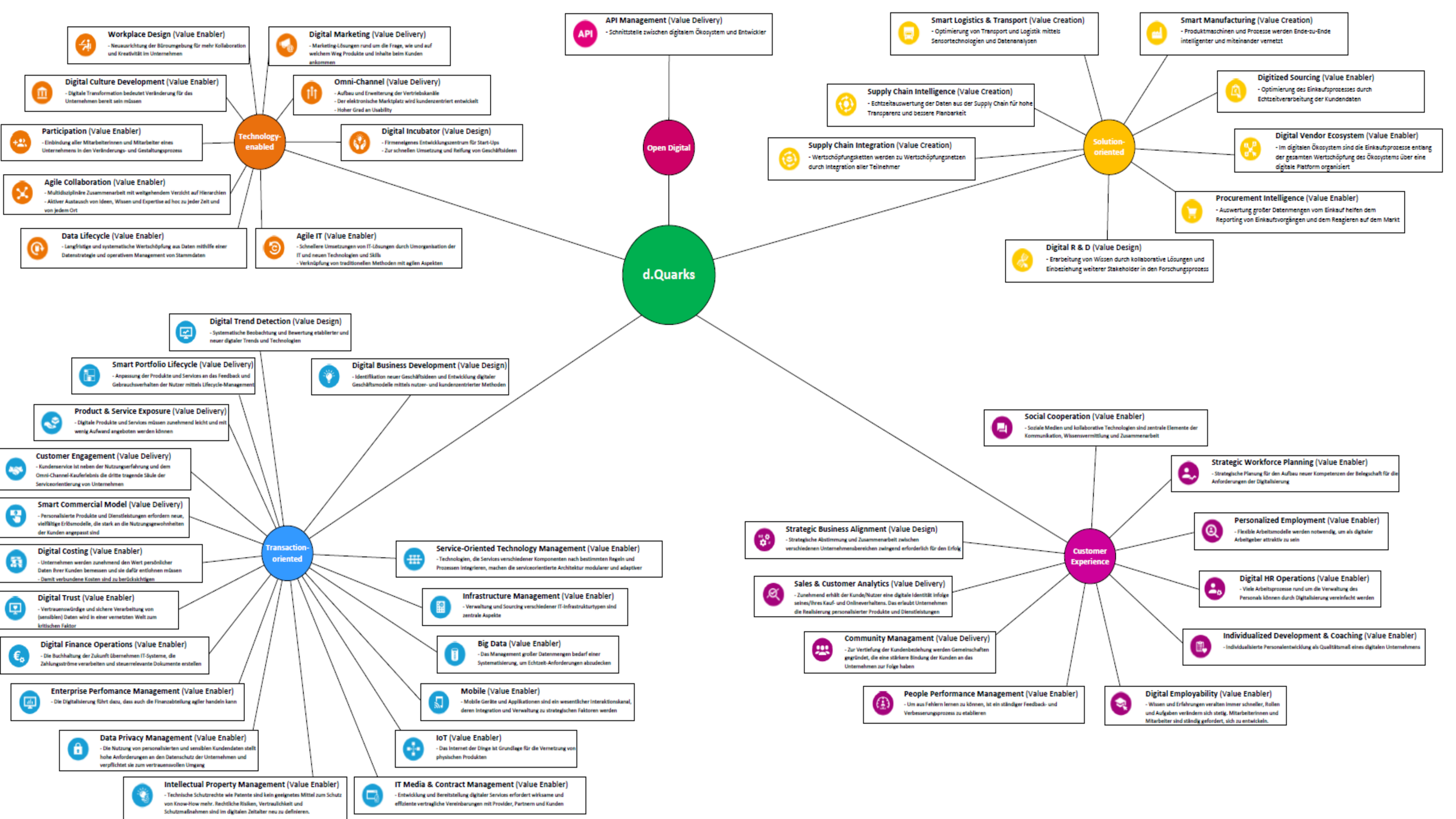


Carsten Hentrich / Michael Pachmajer

d.quarks

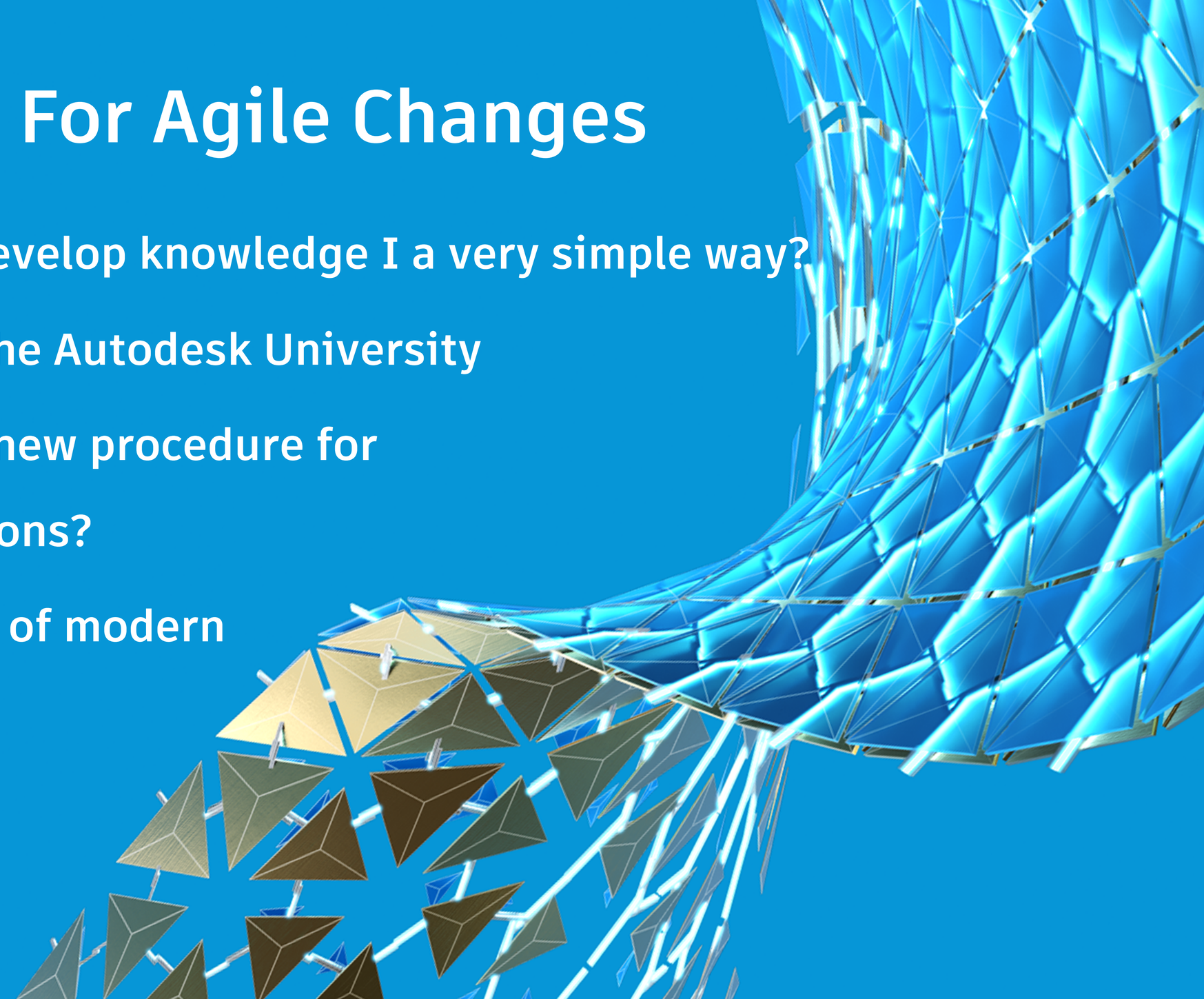
The Path to Digital Business

MURMANN
MURMANN PUBLISHERS


d.Quarks
Open Digital
Technology-enabled
Solution-oriented
Transaction-oriented
Customer Experience
API Management (Value Delivery)
- Schnittstelle zwischen digitalem Ökosystem und Entwickler
Workplace Design (Value Enabler)
- Neuausrichtung der Büroumgebung für mehr Kollaboration und Kreativität im Unternehmen
Digital Marketing (Value Delivery)
- Marketing-Lösungen rund um die Frage, wie und auf welchem Weg Produkte und Inhalte beim Kunden ankommen
Digital Culture Development (Value Enabler)
- Digitale Transformation bedeutet Veränderung für das Unternehmen bereit sein müssen
Omni-Channel (Value Delivery)
- Aufbau und Erweiterung der Vertriebskanäle
- Der elektronische Marktplatz wird kundenzentriert entwickelt
- Hoher Grad an Usability
Participation (Value Enabler)
- Einbindung aller Mitarbeiterinnen und Mitarbeiter eines Unternehmens in den Veränderungs- und Gestaltungsprozess
Digital Incubator (Value Design)
- Firmeneigenes Entwicklungszentrum für Start-Ups
- Zur schnellen Umsetzung und Reifung von Geschäftsideen
Agile Collaboration (Value Enabler)
- Multidisziplinäre Zusammenarbeit mit weitgehendem Verzicht auf Hierarchien
- Aktiver Austausch von Ideen, Wissen und Expertise ad hoc zu jeder Zeit und von jedem Ort
Data Lifecycle (Value Enabler)
- Langfristige und systematische Wertschöpfung aus Daten mithilfe einer Datenstrategie und operativem Management von Stammdaten
Agile IT (Value Enabler)
- Schnellere Umsetzungen von IT-Lösungen durch Umorganisation der IT und neuen Technologien und Skills
- Verknüpfung von traditionellen Methoden mit agilen Aspekten
Smart Logistics & Transport (Value Creation)
- Optimierung von Transport und Logistik mittels Sensortechnologien und Datenanalysen
Smart Manufacturing (Value Creation)
- Produktmaschinen und Prozesse werden Ende-zu-Ende intelligenter und miteinander vernetzt
Supply Chain Intelligence (Value Creation)
- Echtzeitauswertung der Daten aus der Supply Chain für hohe Transparenz und bessere Planbarkeit
Digitized Sourcing (Value Enabler)
- Optimierung des Einkaufsprozesses durch Echtzeitverarbeitung der Kundendaten
Supply Chain Integration (Value Creation)
- Wertschöpfungsketten werden zu Wertschöpfungsnetzen durch Integration aller Teilnehmer
Digital Vendor Ecosystem (Value Enabler)
- Im digitalen Ökosystem sind die Einkaufsprozesse entlang der gesamten Wertschöpfung des Ökosystems über eine digitale Plattform organisiert
Procurement Intelligence (Value Enabler)
- Auswertung großer Datenmengen vom Einkauf helfen dem Reporting von Einkaufsvorgängen und dem Reagieren auf dem Markt
Digital R & D (Value Design)
- Erarbeitung von Wissen durch kollaborative Lösungen und Einbeziehung weiterer Stakeholder in den Forschungsprozess
Digital Trend Detection (Value Design)
- Systematische Beobachtung und Bewertung etablierter und neuer digitaler Trends und Technologien
Smart Portfolio Lifecycle (Value Delivery)
- Anpassung der Produkte und Services an das Feedback und Gebrauchsverhalten der Nutzer mittels Lifecycle-Management
Digital Business Development (Value Design)
- Identifikation neuer Geschäftsideen und Entwicklung digitaler Geschäftsmodelle mittels nutzer- und kundenzentrierter Methoden
Product & Service Exposure (Value Delivery)
- Digitale Produkte und Services müssen zunehmend leicht und mit wenig Aufwand angeboten werden können
Customer Engagement (Value Delivery)
- Kundenservice ist neben der Nutzungserfahrung und dem Omni-Channel-Kauferlebnis die dritte tragende Säule der Serviceorientierung von Unternehmen
Smart Commercial Model (Value Delivery)
- Personalisierte Produkte und Dienstleistungen erfordern neue, vielfältige Erlösmodelle, die stark an die Nutzungsgewohnheiten der Kunden angepasst sind
Digital Costing (Value Enabler)
- Unternehmen werden zunehmend den Wert persönlicher Daten ihrer Kunden bemessen und sie dafür entlohnen müssen
- Damit verbundene Kosten sind zu berücksichtigen
Digital Trust (Value Enabler)
- Vertrauenswürdige und sichere Verarbeitung von (sensiblen) Daten wird in einer vernetzten Welt zum kritischen Faktor
Digital Finance Operations (Value Enabler)
- Die Buchhaltung der Zukunft übernehmen IT-Systeme, die Zahlungsströme verarbeiten und steuerrelevante Dokumente erstellen
Enterprise Perfomance Management (Value Enabler)
- Die Digitalisierung führt dazu, dass auch die Finanzabteilung agiler handeln kann
Data Privacy Management (Value Enabler)
- Die Nutzung von personalisierten und sensiblen Kundendaten stellt hohe Anforderungen an den Datenschutz der Unternehmen und verpflichtet sie zum vertrauensvollen Umgang
Intellectual Property Management (Value Enabler)
- Technische Schutzrechte wie Patente sind kein geeignetes Mittel zum Schutz von Know-How mehr. Rechtliche Risiken, Vertraulichkeit und Schutzmaßnahmen sind im digitalen Zeitalter neu zu definieren.
Service-Oriented Technology Management (Value Enabler)
- Technologien, die Services verschiedener Komponenten nach bestimmten Regeln und Prozessen integrieren, machen die serviceorientierte Architektur modularer und adaptiver
Infrastructure Management (Value Enabler)
- Verwaltung und Sourcing verschiedener IT-Infrastrukturtypen sind zentrale Aspekte
Big Data (Value Enabler)
- Das Management großer Datenmengen bedarf einer Systematisierung, um Echtzeit-Anforderungen abzudecken
Mobile (Value Enabler)
- Mobile Geräte und Applikationen sind ein wesentlicher Interaktionskanal, deren Integration und Verwaltung zu strategischen Faktoren werden
IoT (Value Enabler)
- Das Internet der Dinge ist Grundlage für die Vernetzung von physischen Produkten
IT Media & Contract Management (Value Enabler)
- Entwicklung und Bereitstellung digitaler Services erfordert wirksame und effiziente vertragliche Vereinbarungen mit Provider, Partnern und Kunden
Social Cooperation (Value Enabler)
- Soziale Medien und kollaborative Technologien sind zentrale Elemente der Kommunikation, Wissensvermittlung und Zusammenarbeit
Strategic Workforce Planning (Value Enabler)
- Strategische Planung für den Aufbau neuer Kompetenzen der Belegschaft für die Anforderungen der Digitalisierung
Strategic Business Alignment (Value Design)
- Strategische Abstimmung und Zusammenarbeit zwischen verschiedenen Unternehmensbereichen zwingend erforderlich für den Erfolg
Personalized Employment (Value Enabler)
- Flexible Arbeitsmodelle werden notwendig, um als digitaler Arbeitgeber attraktiv zu sein
Sales & Customer Analytics (Value Delivery)
- Zunehmend erhält der Kunde/Nutzer eine digitale Identität infolge seines/ihres Kauf- und Onlineverhaltens. Das erlaubt Unternehmen die Realisierung personalisierter Produkte und Dienstleistungen
Digital HR Operations (Value Enabler)
- Viele Arbeitsprozesse rund um die Verwaltung des Personals können durch Digitalisierung vereinfacht werden
Community Managament (Value Delivery)
- Zur Vertiefung der Kundenbeziehung werden Gemeinschaften gegründet, die eine stärkere Bindung der Kunden an das Unternehmen zur Folge haben
Individualized Development & Coaching (Value Enabler)
- Individualisierte Personalentwicklung als Qualitätsmaß eines digitalen Unternehmens
People Performance Management (Value Enabler)
- Um aus Fehlern lernen zu können, ist ein ständiger Feedback- und Verbesserungsprozess zu etablieren
Digital Employability (Value Enabler)
- Wissen und Erfahrungen veralten immer schneller, Rollen und Aufgaben verändern sich stetig. Mitarbeiterinnen und Mitarbeiter sind ständig gefordert, sich zu entwickeln.

Best Practices For Agile Changes

- ✓How to capture and develop knowledge I a very simple way?
- ✓Getting Inspired On The Autodesk University
- ✓Just Do It! Starting a new procedure for Brownfield Modifications?
- ✓Agile Implementation of modern cloud collaboration!



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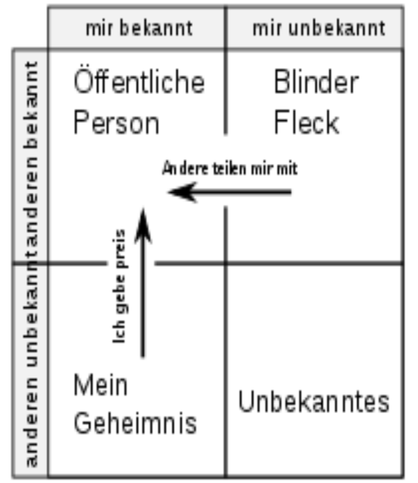
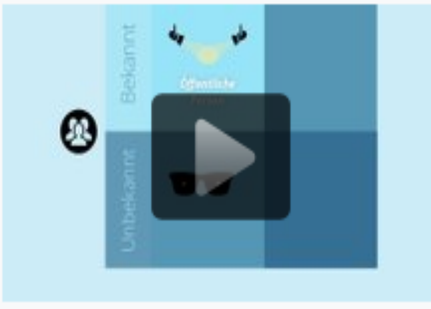
Johari-Fenster

Das **Johari-Fenster** ist ein Fenster bewusster und unbewusster Persönlichkeits- und Verhaltensmerkmale zwischen einem Selbst und anderen oder einer Gruppe. Entwickelt wurde es 1955 von den amerikanischen Sozialpsychologen Joseph Luft und Harry Ingham.[1] Die Vornamen dieser beiden wurden für die Namensgebung herangezogen. Mit Hilfe des Johari-Fensters wird vor allem der so genannte „blinde Fleck" im Selbstbild eines Menschen illustriert.

Es spielt in der gruppendynamischen Arbeit seit den 1960er, 70er Jahren eine bedeutsame Rolle zur Demonstration der Unterschiede zwischen Selbst- und Fremdwahrnehmung und gehört zum Standardrepertoire gruppendynamischer Modelle und Verfahren. Systematisch gehört es zur differentiellen und Persönlichkeitspsychologie, zu den Abwehrmechanismen, zur Sozialpsychologie und zur Gruppendynamik.



Das Johari-Fenster
(Darstellung und Bezeichnung der Felder weichen je nach Literatur ab)



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Johari-Adjektive [Bearbeiten | Quelltext bearbeiten]

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Allgemein

AS400/BRAIN • BFlow/COI • BIM 360 • CP-Portal • CP Smart Solutions • Outlook • Rechner einrichten • Software

CP Portal Intranet | CP Portal Extranet | CP Plant View | CP YouTube Kanal | CP Webpage

Anlagenplanung und Konstruktion

AutoCAD •Engineering Base • Inventor • Navisworks • ReCap • Training 3D-CAD • Vault Pro

Einkauf

Struktur des Einkaufs

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MediaWiki FAQ
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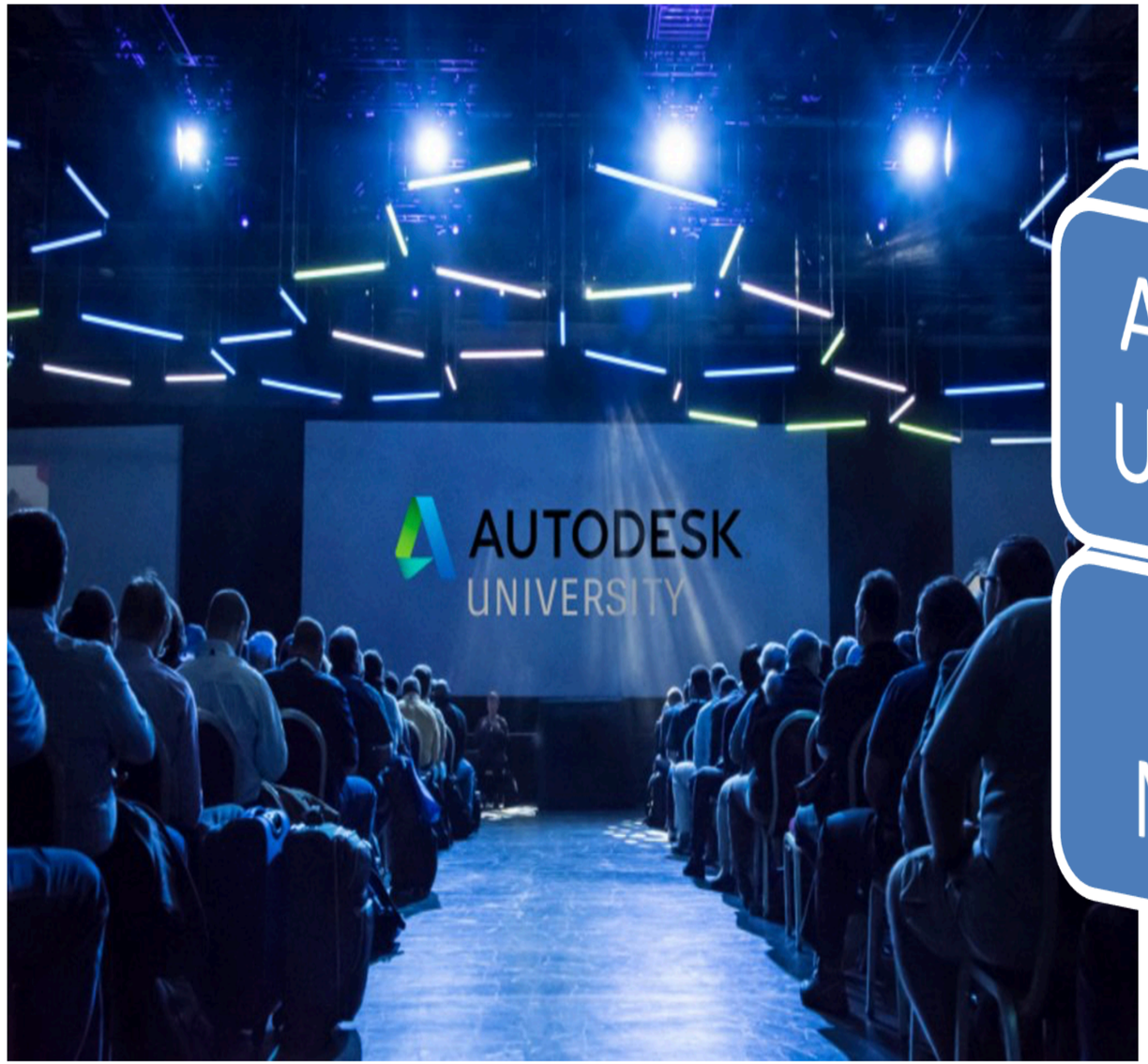
Learn how to combat

Getting Inspired @ the Autodesk University!

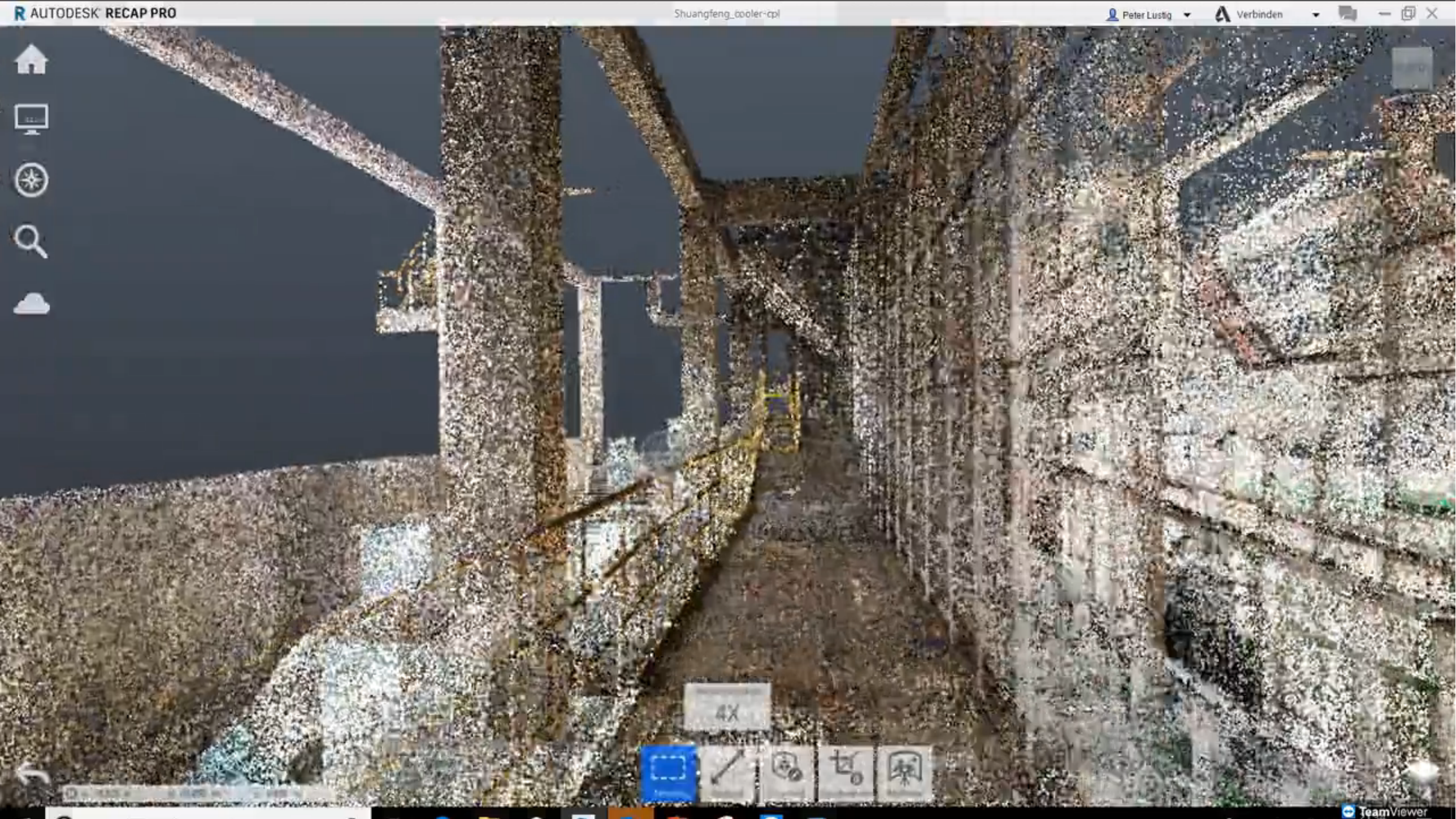


Autodesk University

- Las Vegas November 2017

Social Network

- LinkedIn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Shuangfeng_cooler-cpl
Peter Lustig
Verbinden
4X
TeamViewer


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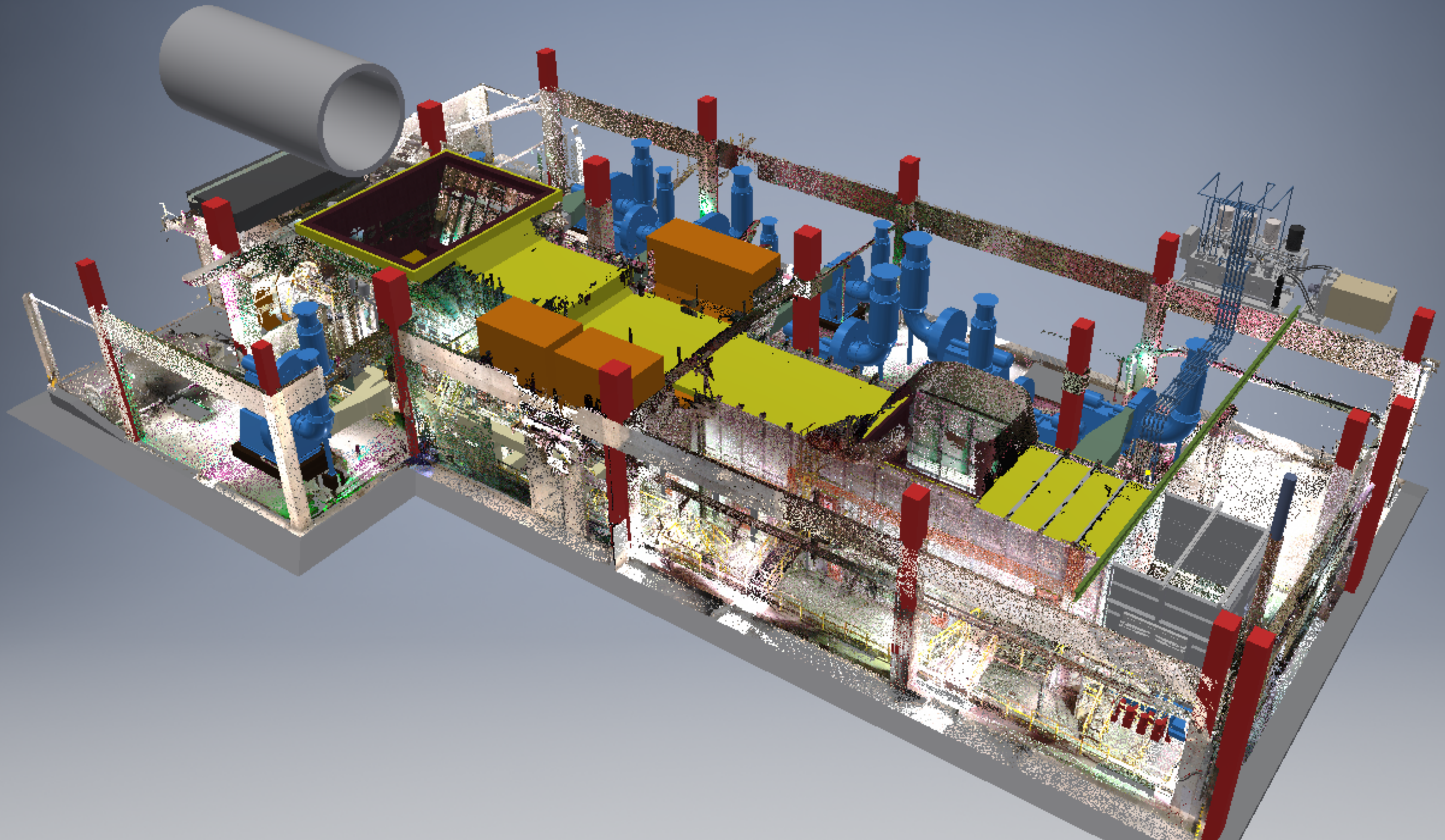
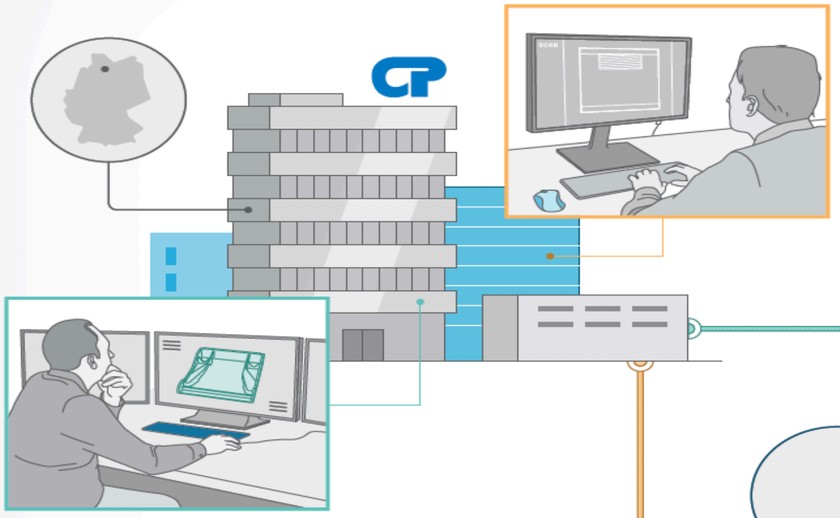


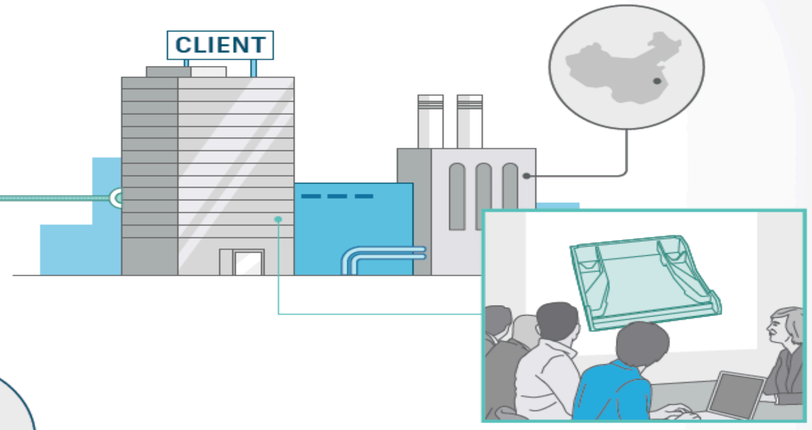
CLAUDIUS PETERS: AGILE WORKFLOWS WITH BIM

AUTODESK.



"For us, digital transformation is not a project; rather it's our internal attitude."

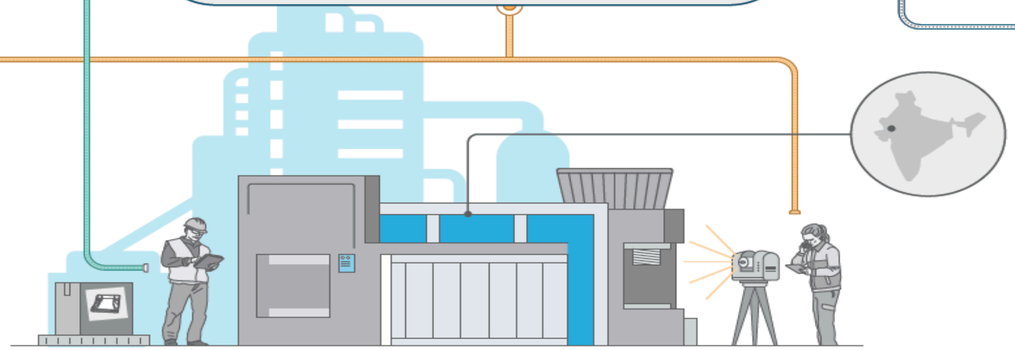
—Thomas Nagel. Operations Manager, responsible for the digital transformation at Claudius Peters.



Claudius Peters supplies machines and systems for the building materials industry globally.

The specialist for bulk materials and process technology from Buxtehude is focusing on digital transformation and agile processes. The company uses BIM 360 to manage all planning and change projects.

The cloud platform has proven to be the ideal tool for Claudius Peters to meet its clients' requirements. This includes providing BIM data and implementing Brownfield projects within shorter and shorter project times.



"We want to create an agile, digital workflow for our change management."

—Thomas Nagel. Operations Manager

INTEGRATION OF BIM 360 AT CLAUDIUS PETERS

NOVEMBER 2017
Getting familiar: Presentation at the Autodesk University

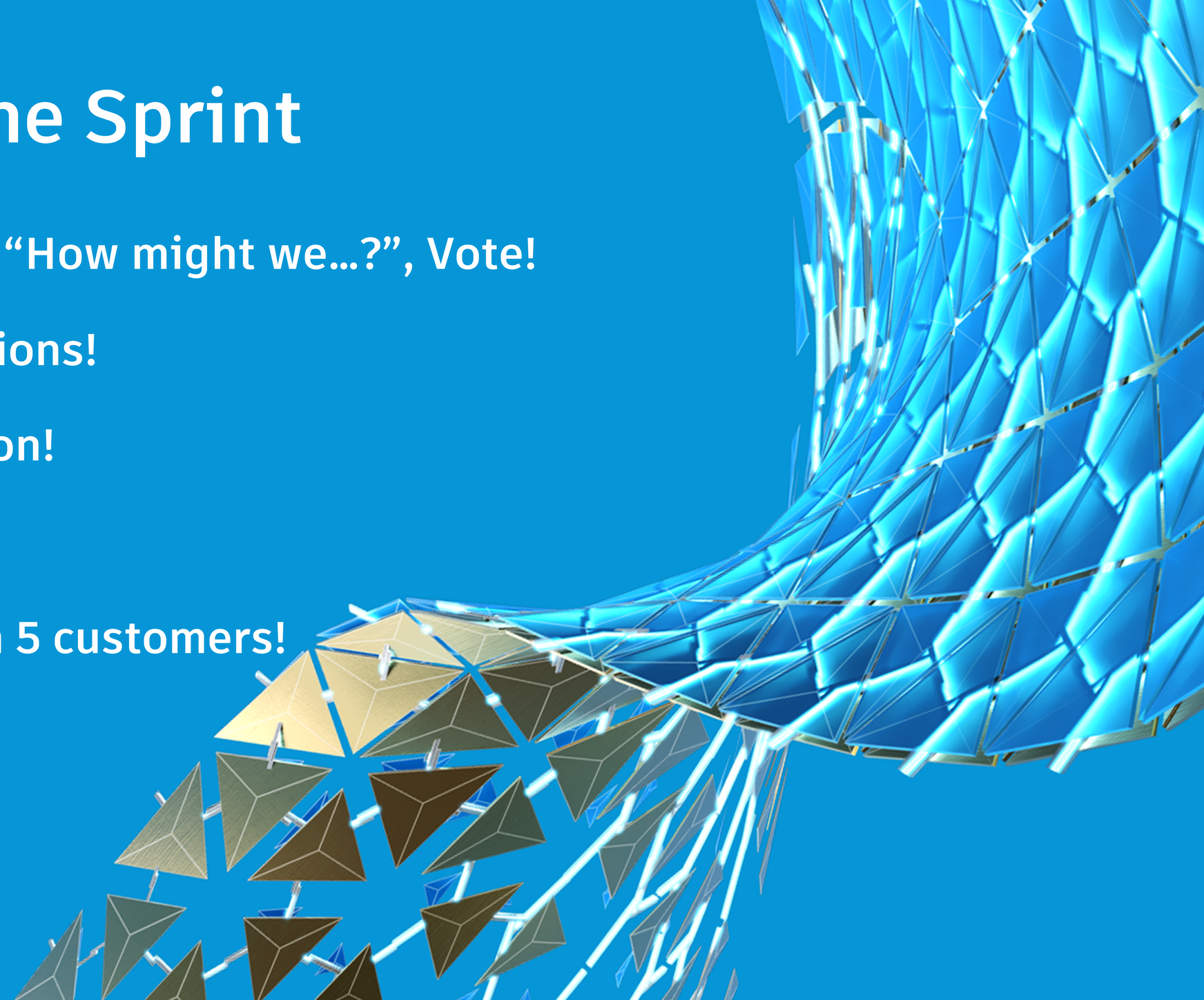
MARCH 2018
Test phase: Potential recognized. Excited team

APRIL 2018
100% implemented: All new projects run with BIM 360

2019
New: Structure of supplier portal and direct connection of ERP/DMS

Welcome To The Sprint

- ✓Map the Problem, Ask “How might we…?”, Vote!
- ✓Sketch different solutions!
- ✓Decide On Best Solution!
- ✓Build a Prototype!
- ✓Test and Validate with 5 customers!



Welcome to the sprint!

https://www.youtube.com/watch?v=AuktI4lBj6M

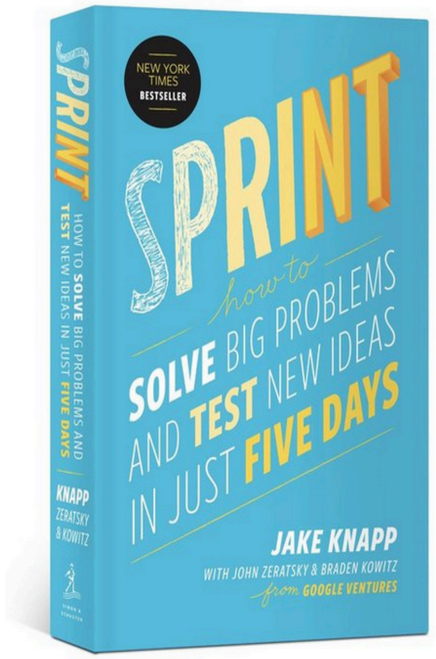
There's a lot at stake.

Time is tight.

SPRINT

THE DESIGN SPRINT / THE SPRINT BOOK / BONUS PACK / REMOTE SPRINT GUIDE /

BOOTCAMP / MASTERCLASS / SUPPLIES / COMMUNITY

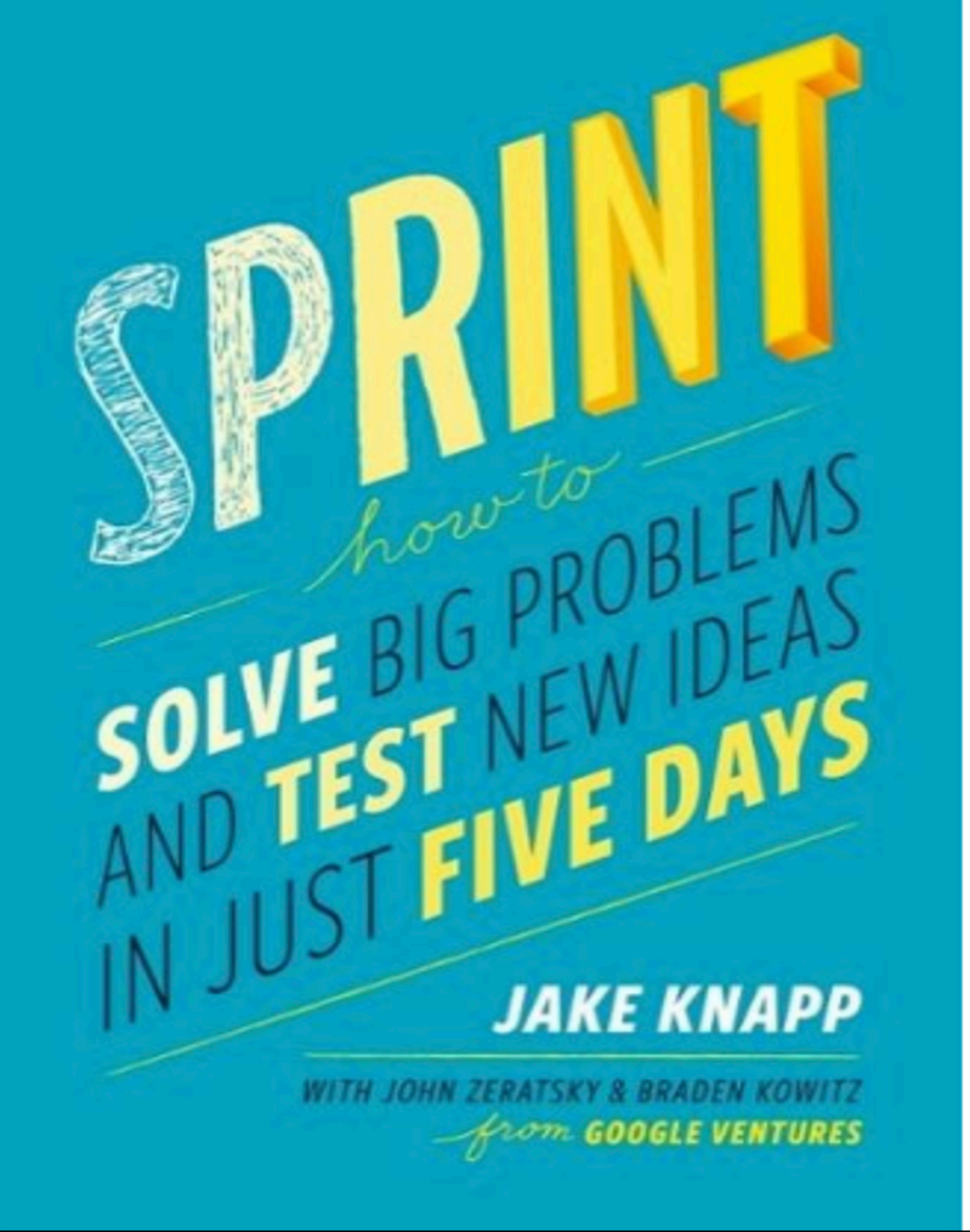


The **Design Sprint** is a five-day process for solving problems and testing new ideas.

Invented at Google by Jake Knapp, perfected with more than 150 startups at GV, then shared with the world in the bestselling book *Sprint*.

Learn **how it works** »

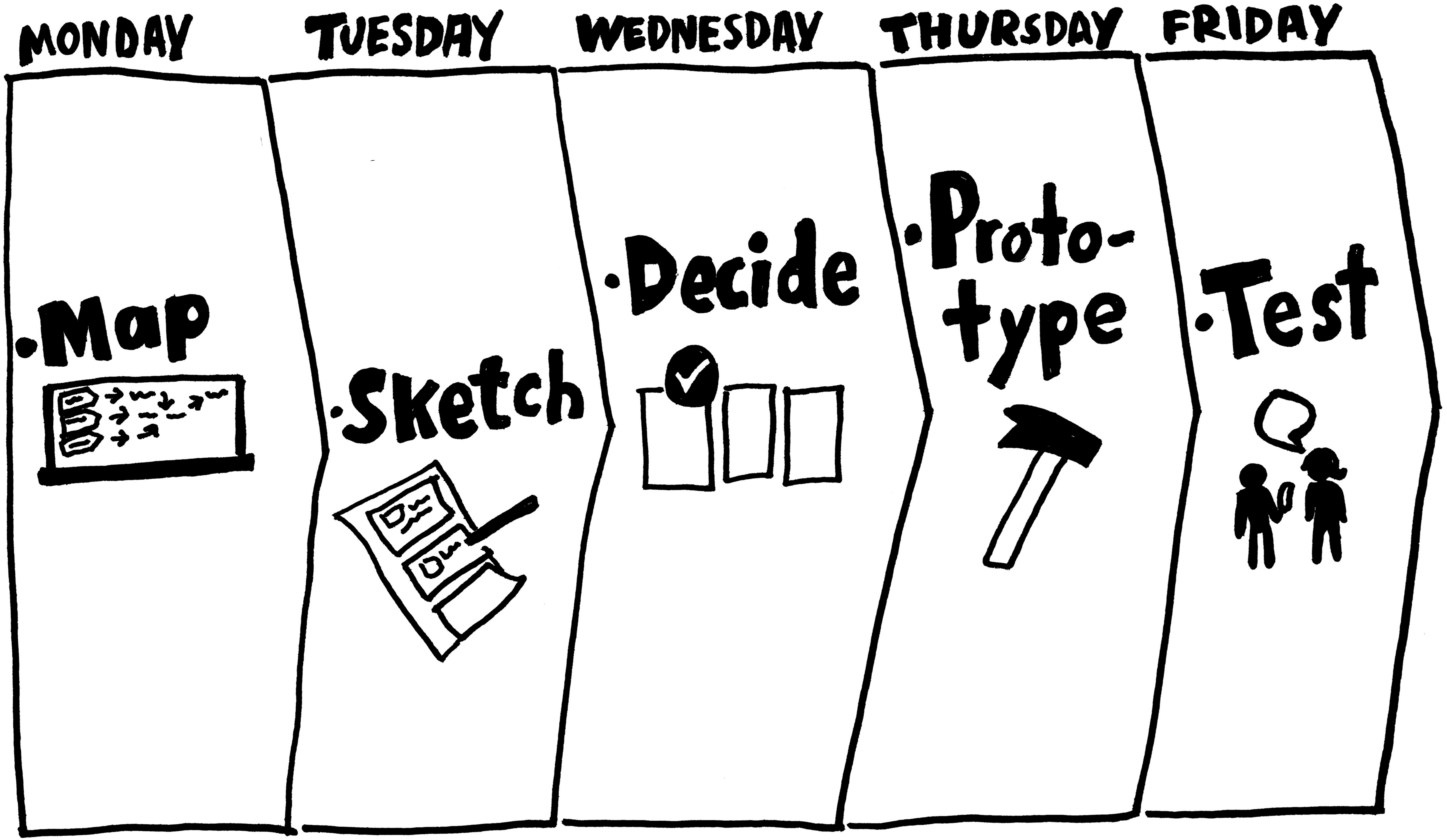
https://www.thesprintbook.com/

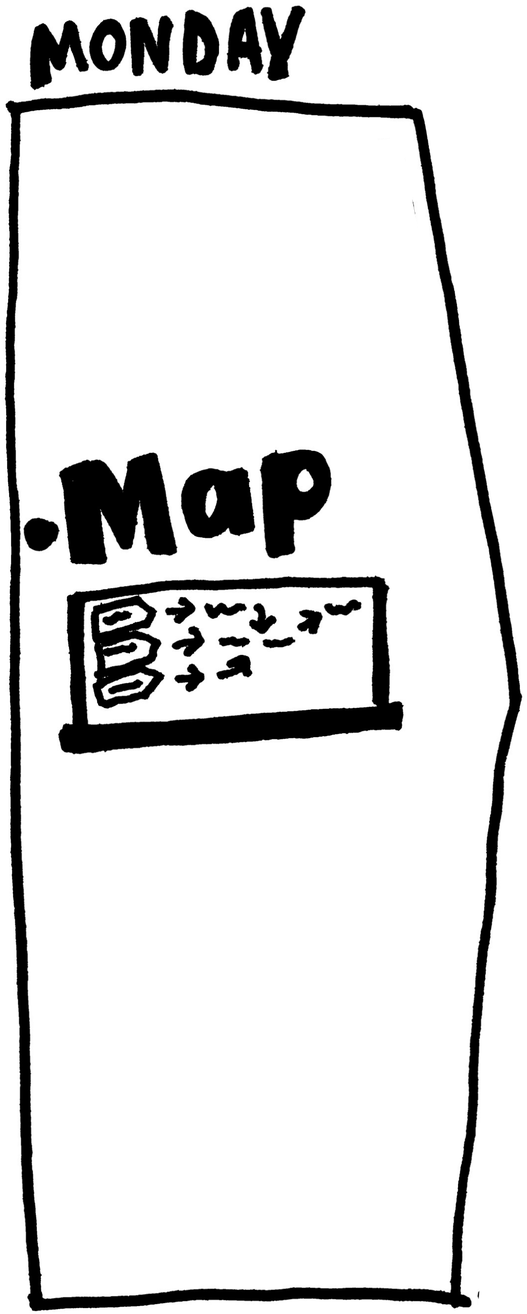


No problem's too big,

than that a sprint would

not could be resolved


MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
Map
Sketch
Decide
Proto-type
Test



https://www.youtube.com/watch?v=7zOBMxRYJ7I&list=PLNKW8GAxivxcwqF2OU7UvjkT_lPMqz_C8

Sprint questions

1. How can we make sure that in the future we are at the customer's site with the right competence?

2. How can we collect and receive important data from customers as comprehensively and early as possible?

3. How can we collect, evaluate and use technical data from the customer?

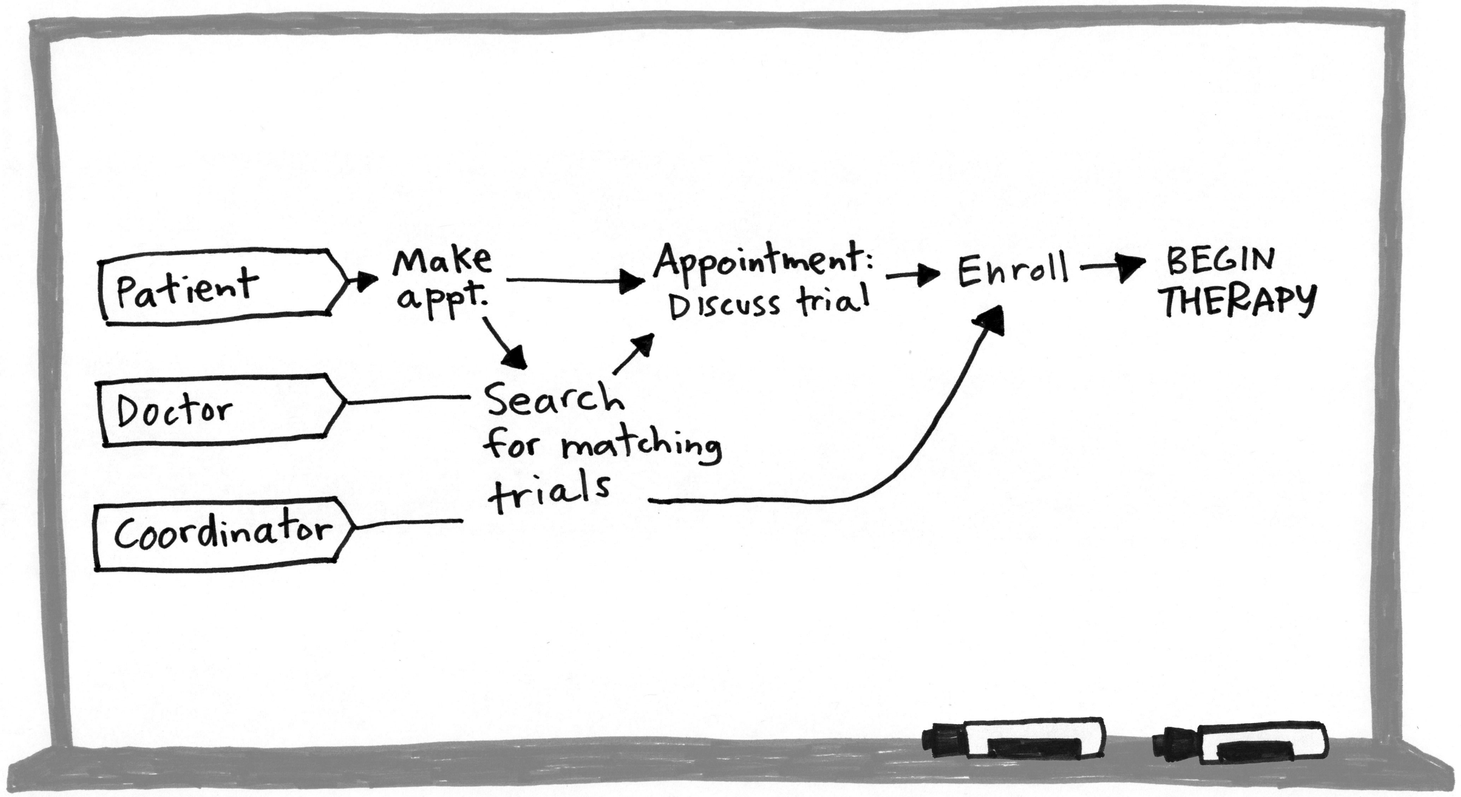
4. How do we manage to convince the customer of our concept early on?

5. How can we bind the customer to us early and firmly so that he contacts us immediately when he plans a conversion?

6. How can we develop and implement standards so that our solution is fast and cost-effective?

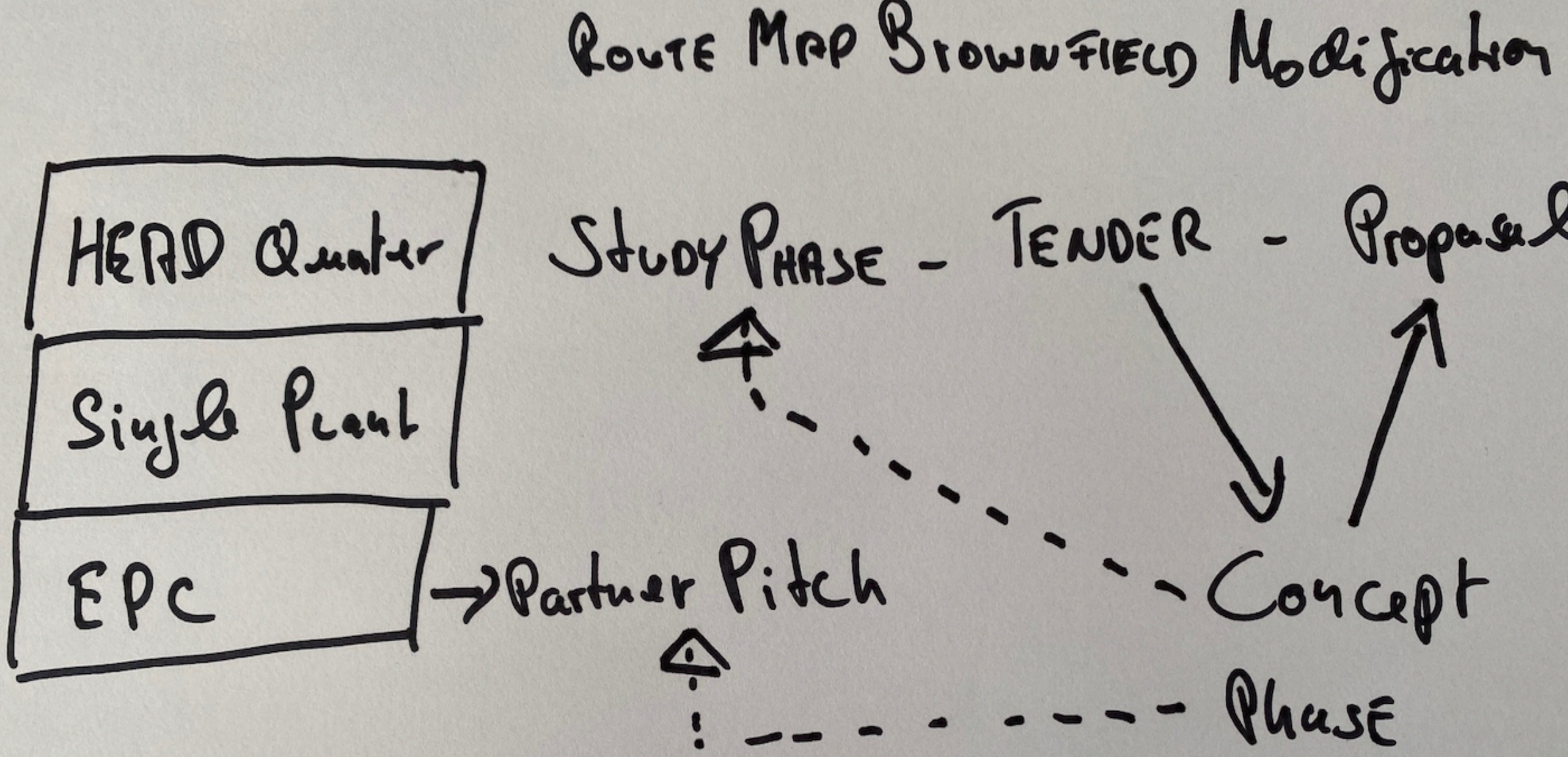
7. How can we generate new customers?

Route map



Simple illustration of the customer process in 5-15 steps.

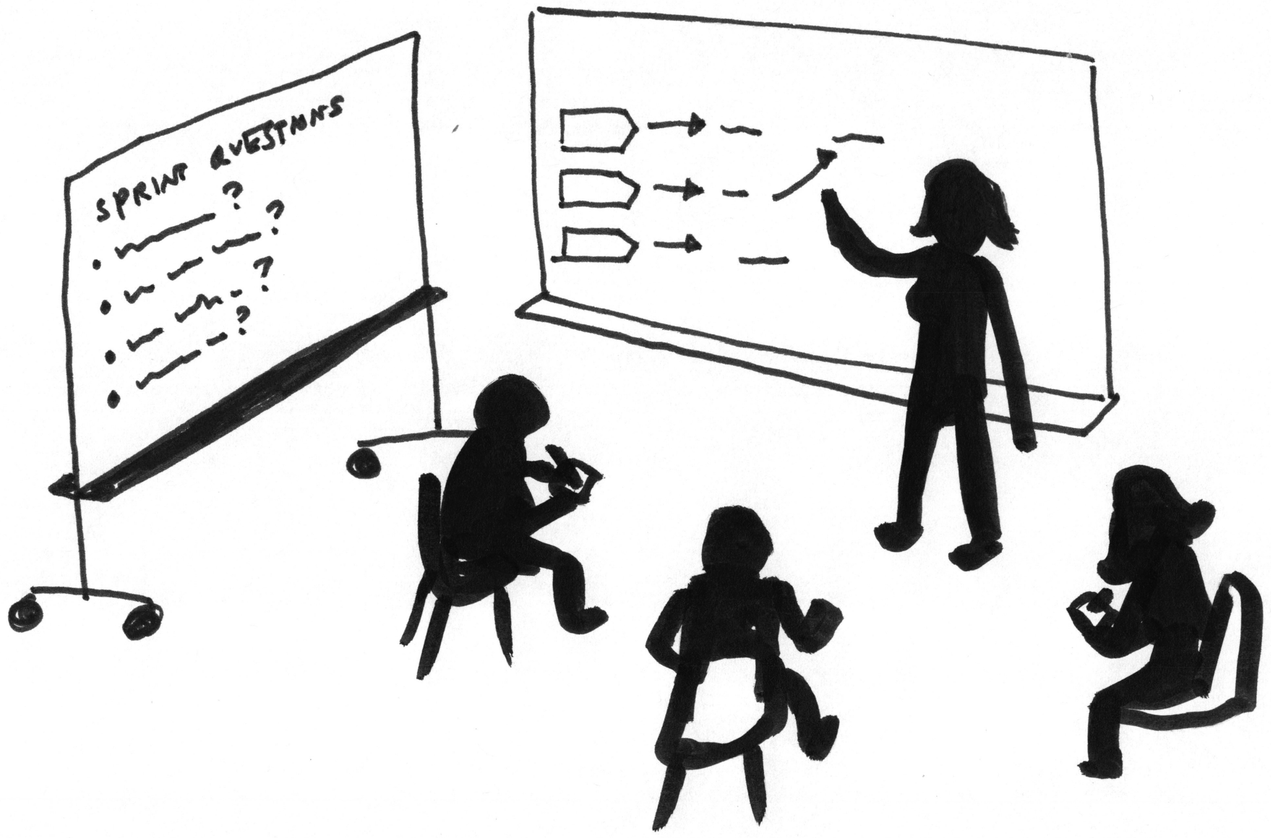
Route Map Brownfield Modification



Nobody knows everything.

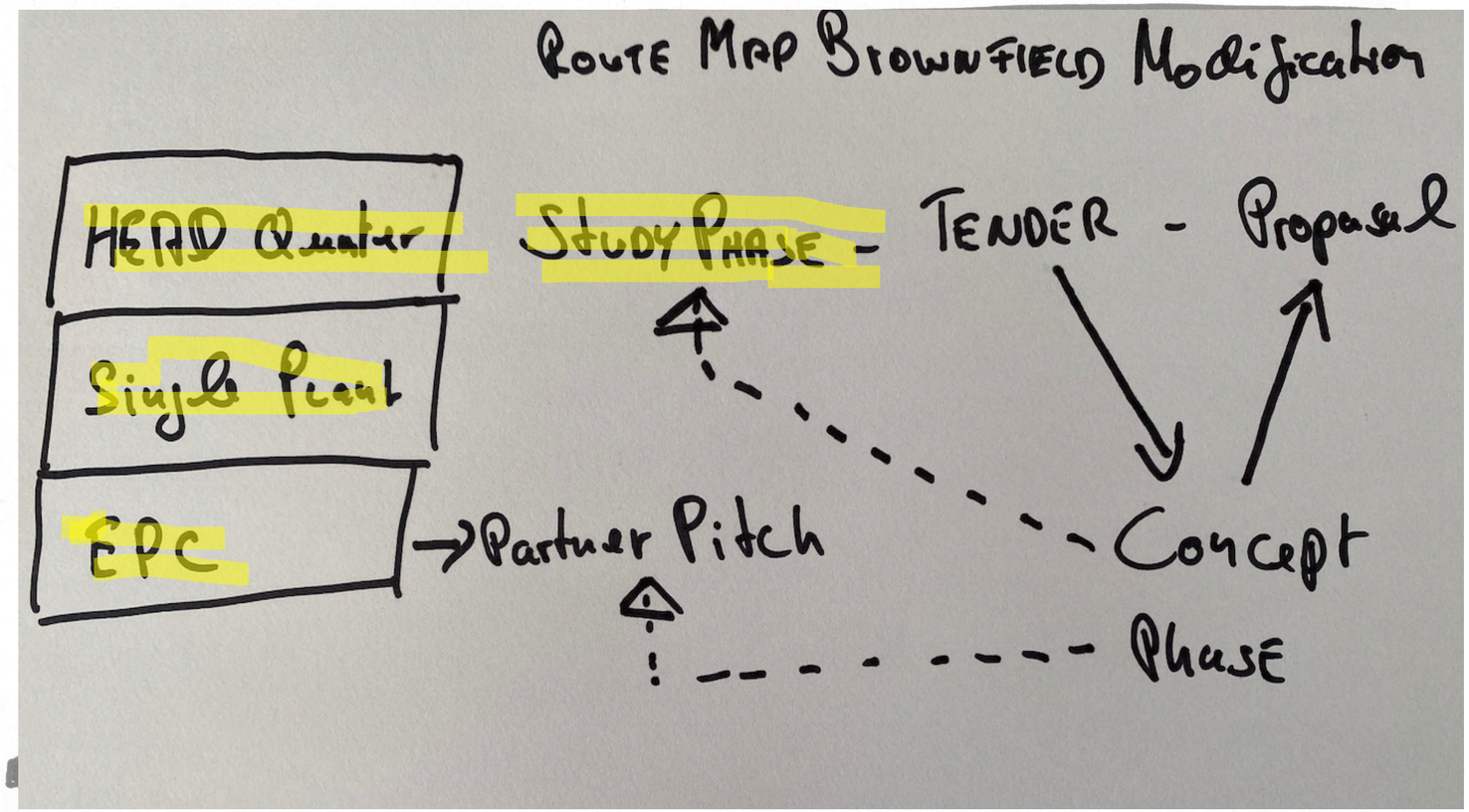
That's why we share knowledge.

We ask experts



We interview the experts individually and note down important information.

Defining the Sprint Goal



Selection of the customer segment and the focus.

The goal is to gain trust for brownfield modifications and establish a new digital product at the market place!

Our technology shall be identified early in the tender processes our customer in future and we want to win 15 modifications jobs per year.

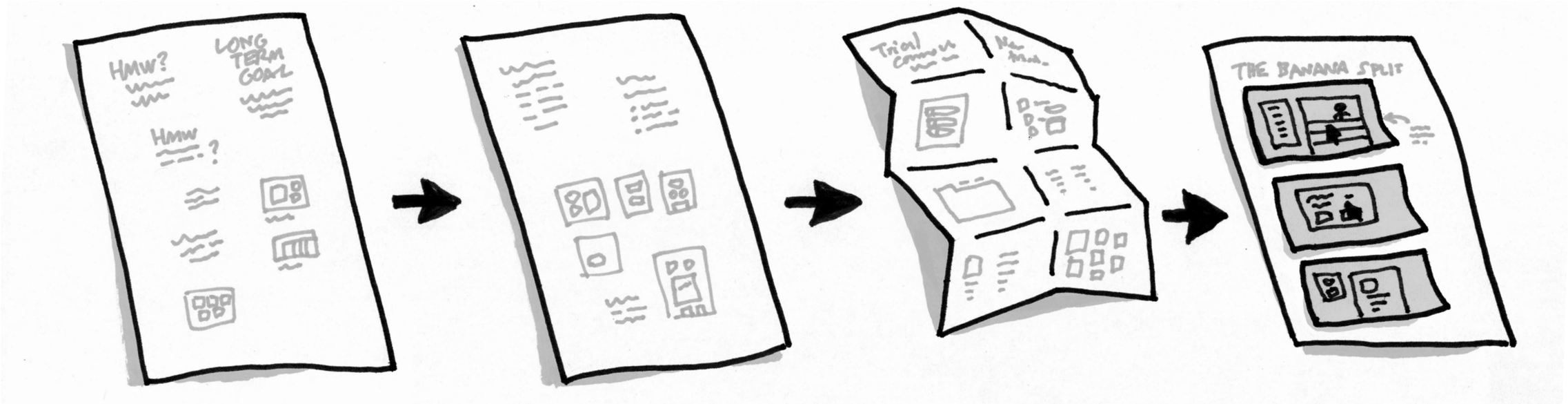
https://www.youtube.com/watch?v=_ITJ5lAXQhg&list=PLNKW8GAxivxcwqF2OU7UvjkT_lPMqz_C8&index=2

No group brainstorming.

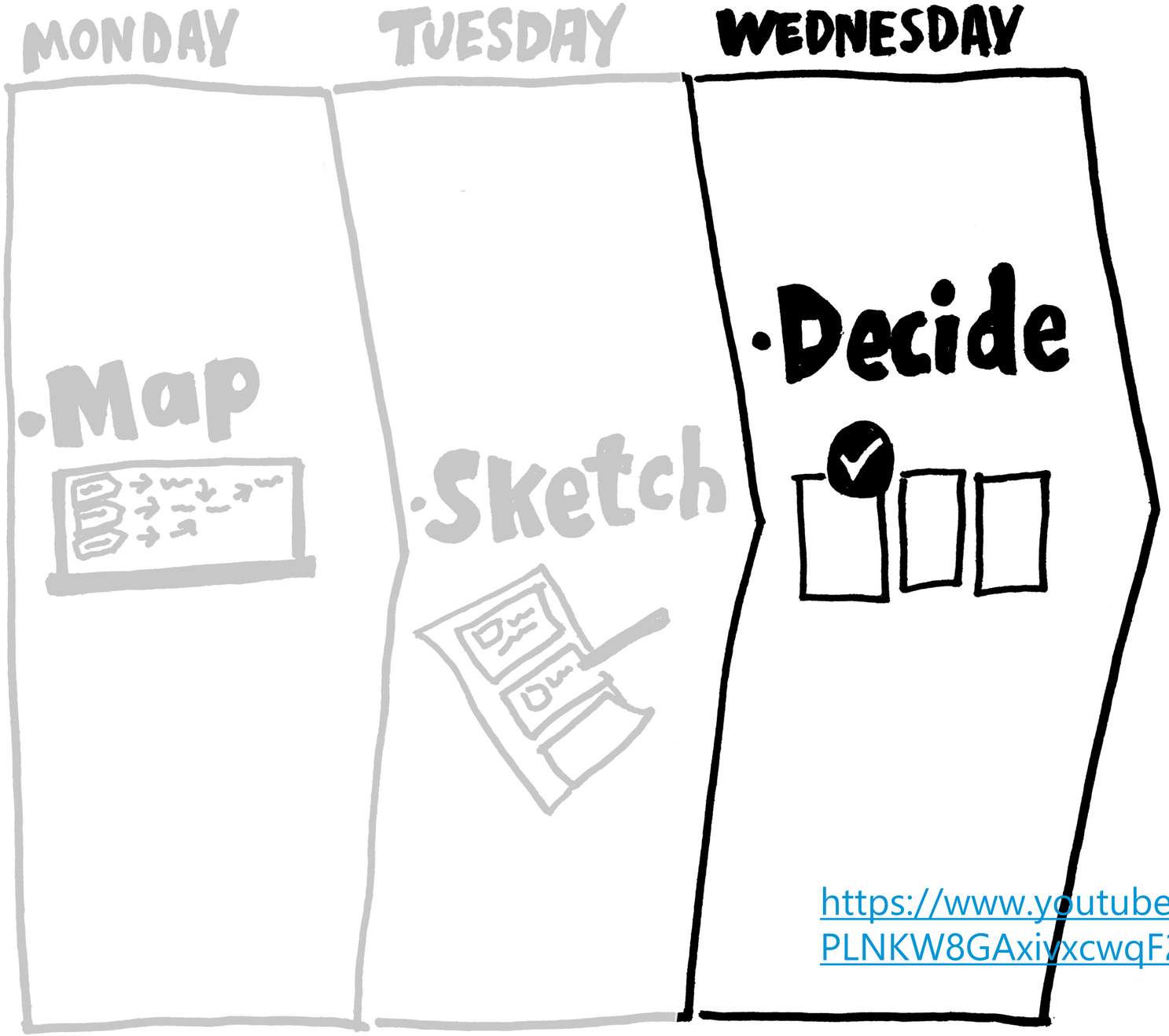
Everyone develops

solutions for **themselves.**

Solution Sketch



4 steps simplify the process.



https://www.youtube.com/watch?v=7BKBFOOKbNo&list=PLNKW8GAxiyxcwqF2OU7UvjkT_lPMqz_C8&index=3

We choose

the best solution.

Important decision

Selection of the best solutions through "silent review" and a structured approach.

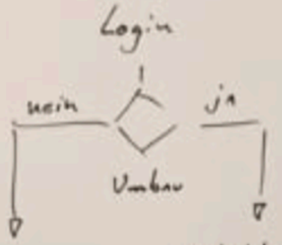
digitaler Kühler-Konfigurator

Variante: online - Kunde

offline - VT

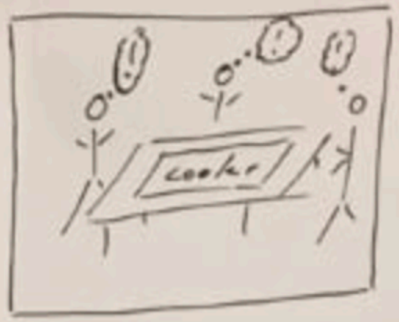
45 tpd/m³

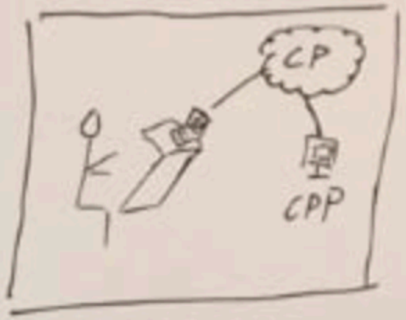
55 - 60

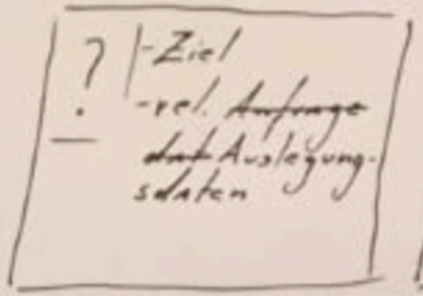


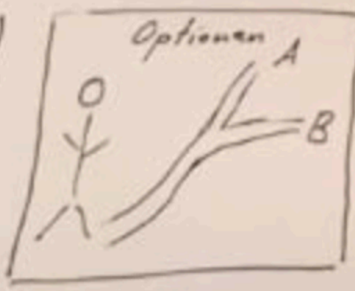
z.B. kühlerabmaße
Ziel Kapazität
rel. Auslegungs daten
vom Kühler Core
Produkt zu bestimmen.

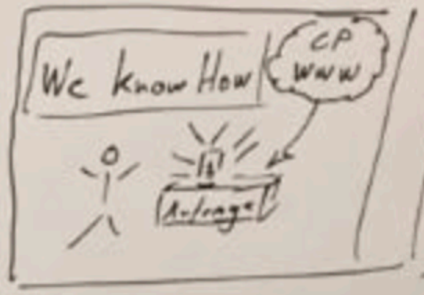
- 6-facher 3D-Modell
- Ventilator Anzahl - Abgleich Bestand
- Materialien
- I/O - Listen
- Preliminary Spezifikation
- Lastangaben
- Beleuchtungsschema
- Wärmebilanz
- Hydraulikplan

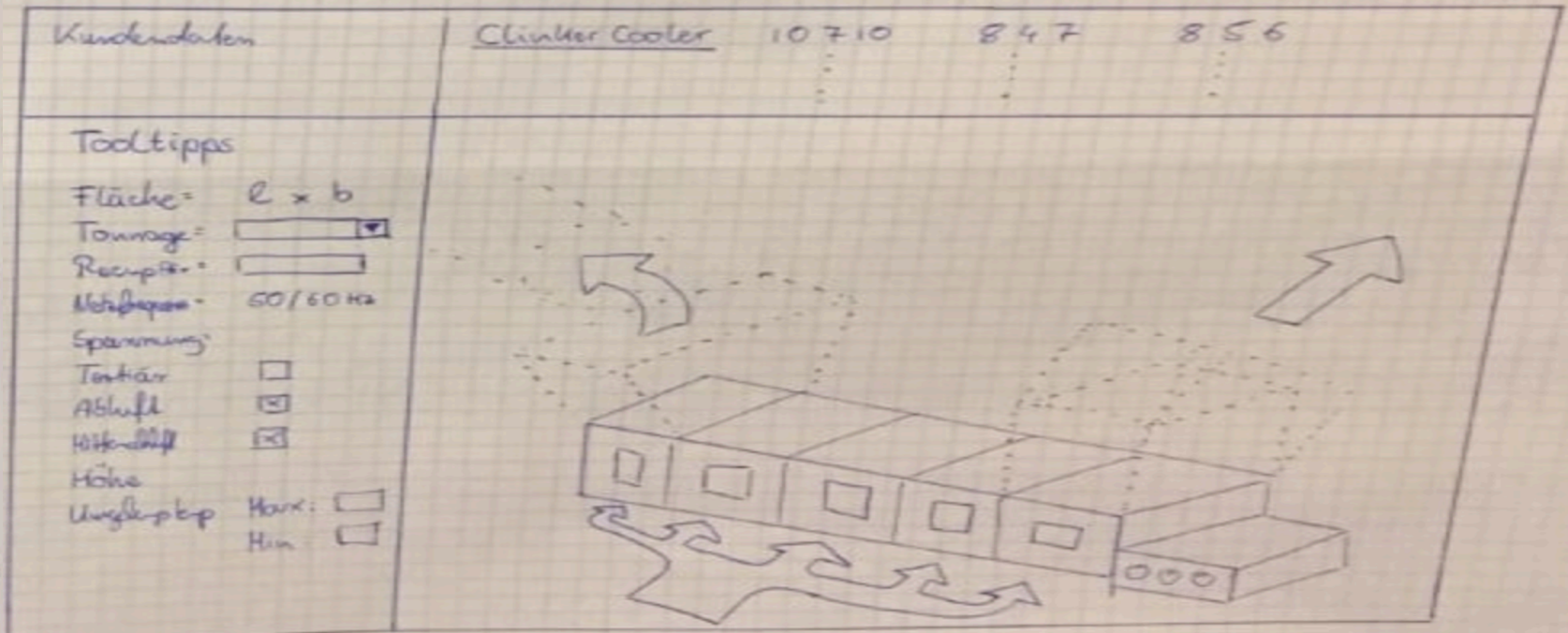






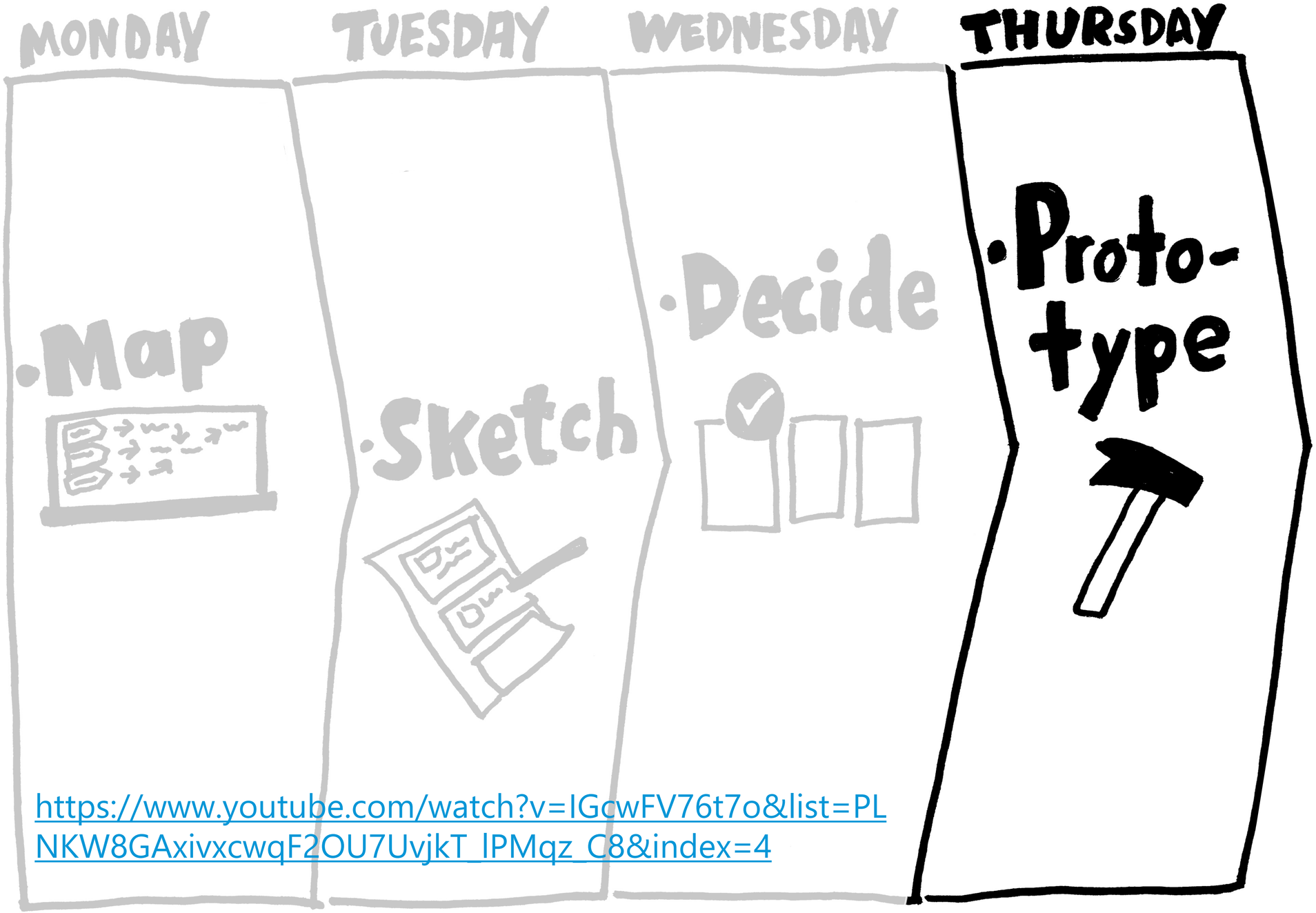






Transfer the best solution into a storyboard:

New York Times
roasters you should know about
Potting shed
Linden alley
4pm Roasters
Blue Bottle
Stumptown
OUR STORY
SHOP
Potting Shed Coffee
How do you brew?
Pour over
espresso
What do you like?
Floral
Bright
Bright Pour over coffees
Linden Alley
How?
Tone?
Floral
4pm Roasters
Pithy about us story text
GREAT COFFEE BY METHOD
BY TONE
Pour over
Espresso
Drip
Floral
Bright
GREAT coffee for Pour Over
Giant Steps
Giant steps
ADD
SUBSCRIBE
How to
Heat it up!
How it tastes
Bright, Chocolate, RC Cola
How to make it
Chemex
French press
Tech specs
Founders notes
Also great for pour over
Also great
17 foot Ceiling
How it tastes
Tech
17 foot
Added to cart
CHECKOUT
Suggestions
Filters
SIGN IN
CREATE
PROCEED AS GUEST
Shipping
Billing
NEXT
Shipping
We'll roast it tomorrow!
NEXT
Payment
DO IT!
Thanks!
We'll roast it tomorrow!
2 days later...
You get the coffee
1 week later
How's your coffee?
1 week later...
You run out
OUT OF COFFEE?
4pm Roasters
BY METHOD
BY TONE
RECENT
17 foot ceiling
BUY
SUBSCRIBE
Start a subscription
17 feet ceiling
1 bag
every
2 weeks
You'll be billed $18 every 2 weeks.
You can cancel, pause, adjust any time.
ADD
Added
SUBSCRIPTION
1 bag of 17 ft ceiling every 2 weeks
CHECKOUT
Checkout ...
You're subscribed!
Any time you can
PAUSE
ADJUST
CANCEL



https://www.youtube.com/watch?v=IGcwFV76t7o&list=PLNKW8GAxivxcwqF2OU7UvjkT_IPMqz_C8&index=4

A realistic facade is all we need for customer testing.

Claudius Peters :: Welco

www.claudiuspeters.com/en-GB

C³ η-Cooler Configuration

CLAUDIUS PETERS

menu

logout

User: Ingmar Holst

- New Project
  - Replacement
    - Technical Data

Technical Data – Plant Design Data

Kiln Section:

OPEX:

- Fuel lower heat value net	725	kcal/kg$_{fuel}$
- Fuel price	80	EUR/t$_{fuel}$
- Power cost	0.07	EUR/kWh
- Cooler availability [%] or cooler related kiln stoppage [h]	98.5	
- Power consumption cooler	4.	kWh/t$_{clinker}$
- Yearly maintenance cost		EUR/a

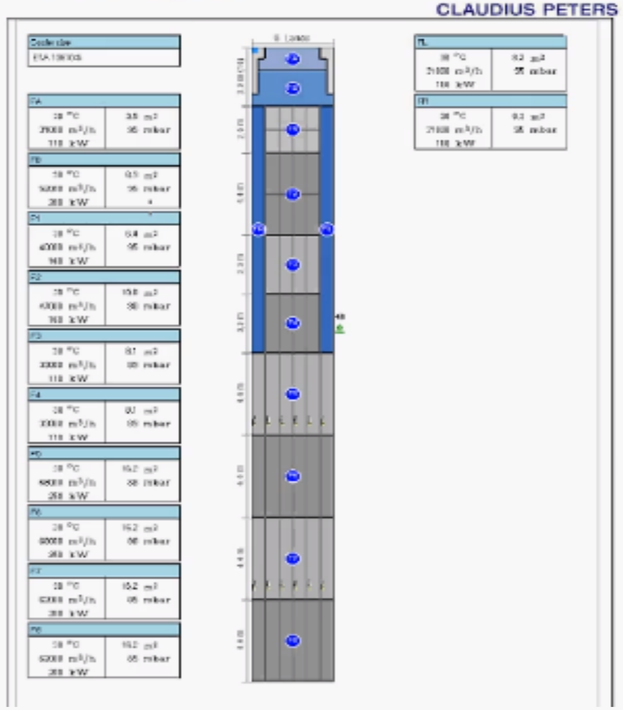
Preheater:

Design type		
Stages		

model confirm

Cooler aeration scheme

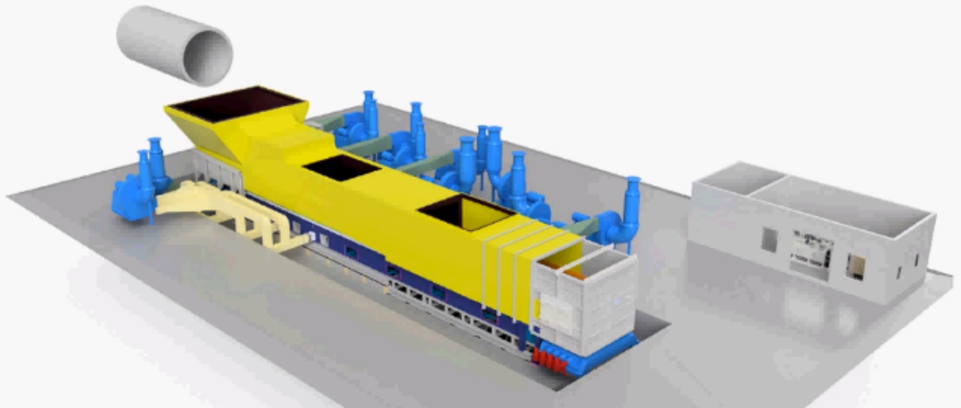
CLAUDIUS PETERS



User: Ingmar Holst

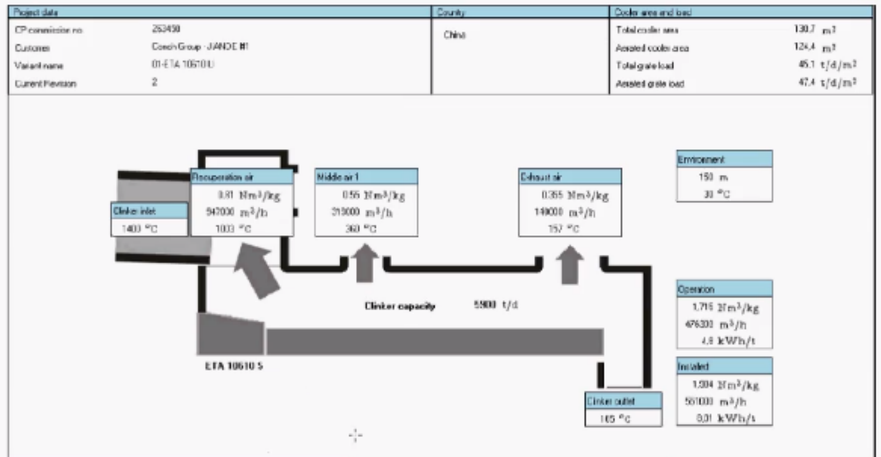
- New Project
  - Electrical Data
  - Material Data
  - Kiln Section
  - Cooler Data

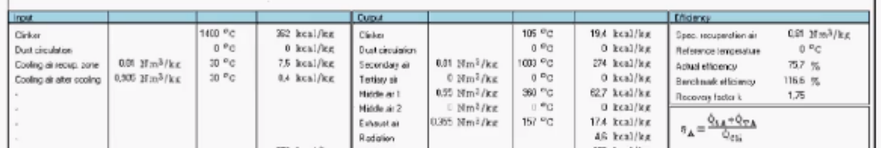
3D-Model | Aerotation Scheme Heat Balance | P&ID | Consumer List | Instrument List | Load Plan | Case Study

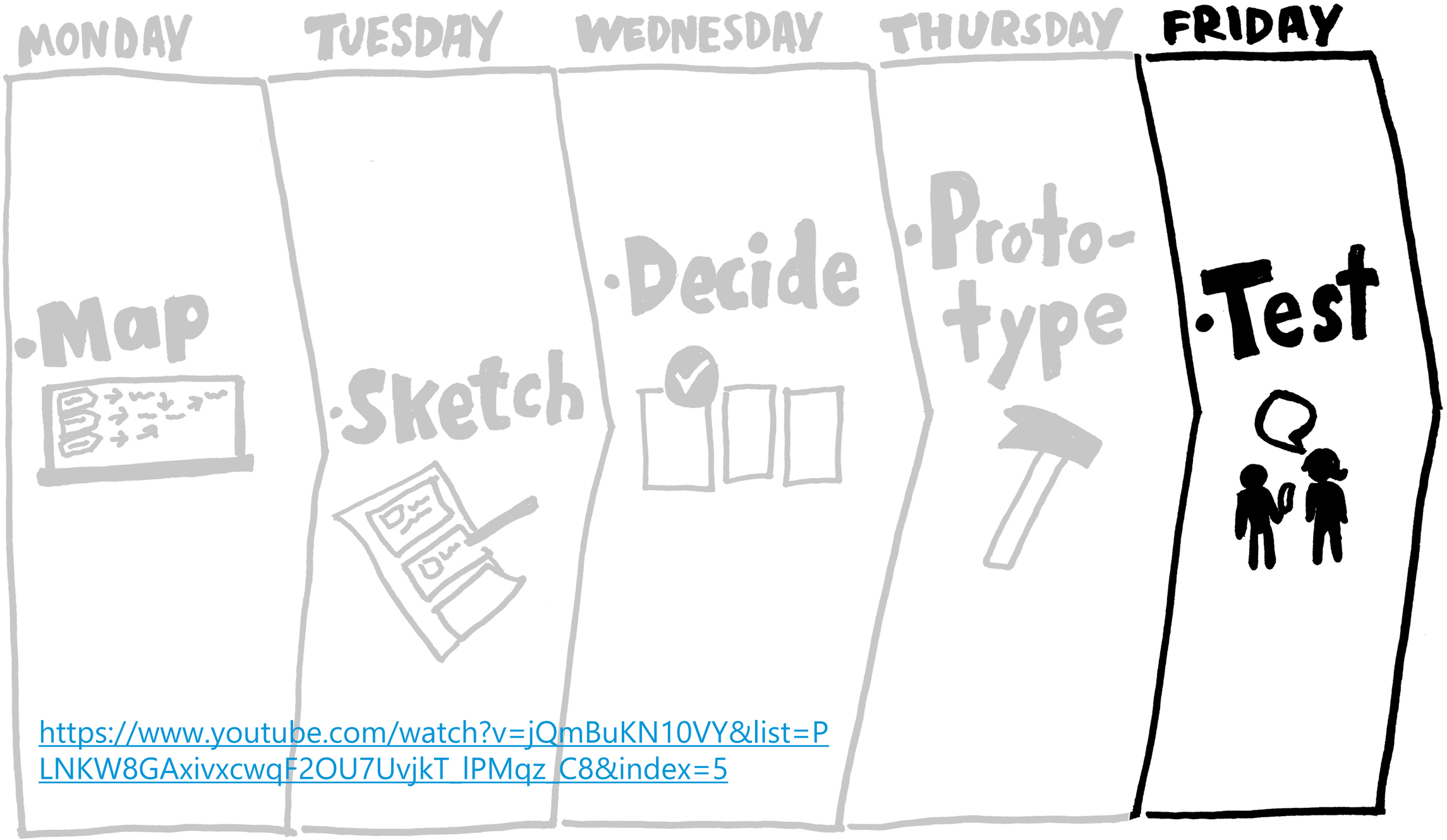


Preliminary Cooler Flow Sheet ETA Cooler - Normal Operation Design

CLA







https://www.youtube.com/watch?v=jQmBuKN10VY&list=PLNKW8GAxivxcwqF2OU7UvjkT_lPMqz_C8&index=5

5 customer interviews are enough to show customer samples.

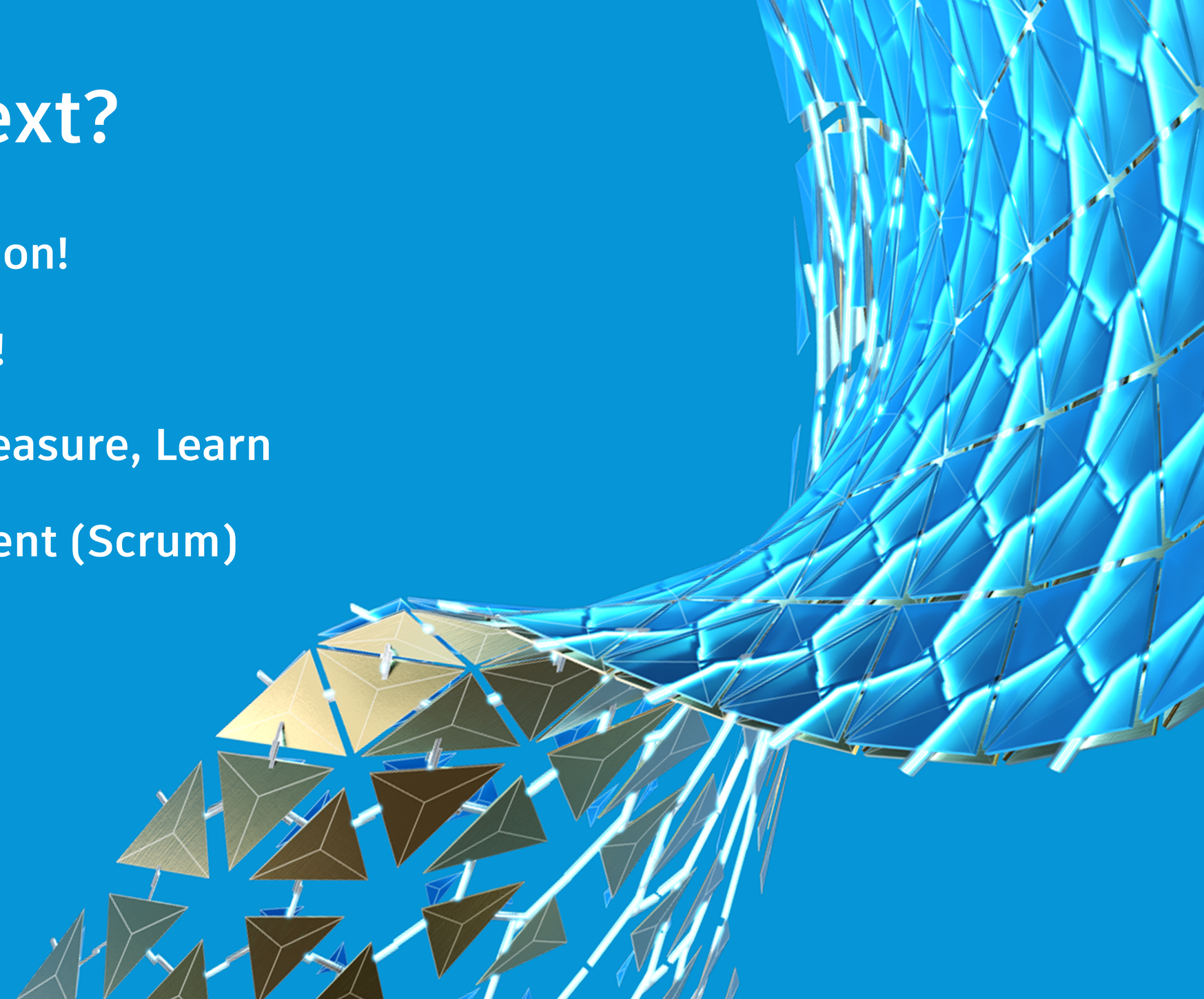
Interview with 5 customers via online meeting

The team is watching the interviews.

At the end of the sprint we have important insights and know what to do next.

What Comes Next?

- ✓Business Model Definition!
- ✓Business Model Canvas!
- ✓Lean Startup - Build, Measure, Learn
- ✓Agile Project Management (Scrum)



BUSINESS MODEL DEFINITION

https://www.youtube.com/watch?v=QoAOzMTLP5s

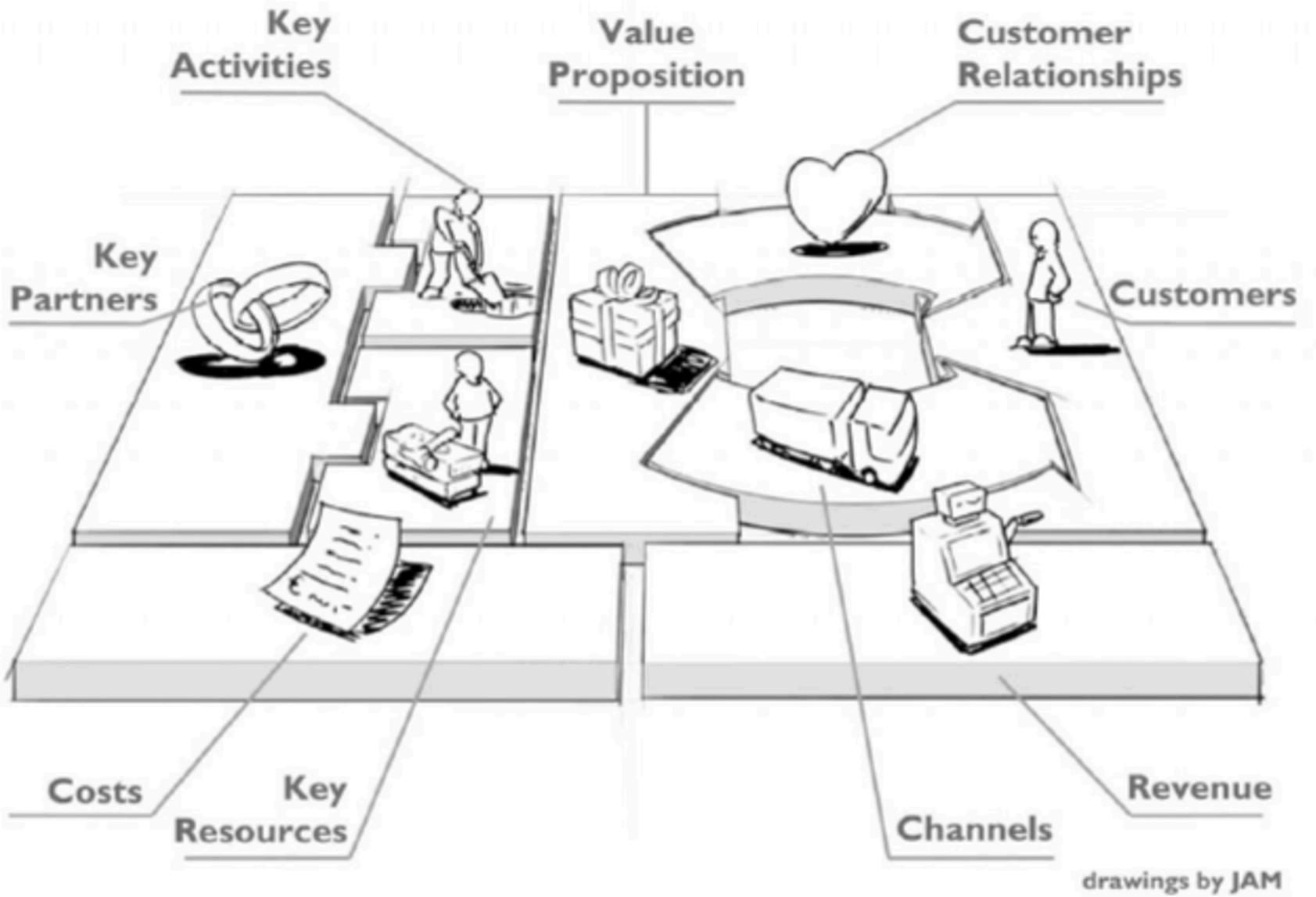
A BUSINESS MODEL DESCRIBES THE RATIONALE OF HOW AN ORGANIZATION CREATES, DELIVERS AND CAPTURES VALUE.

BUSINESS MODEL
(GESCHÄFTSMODELL)

≠

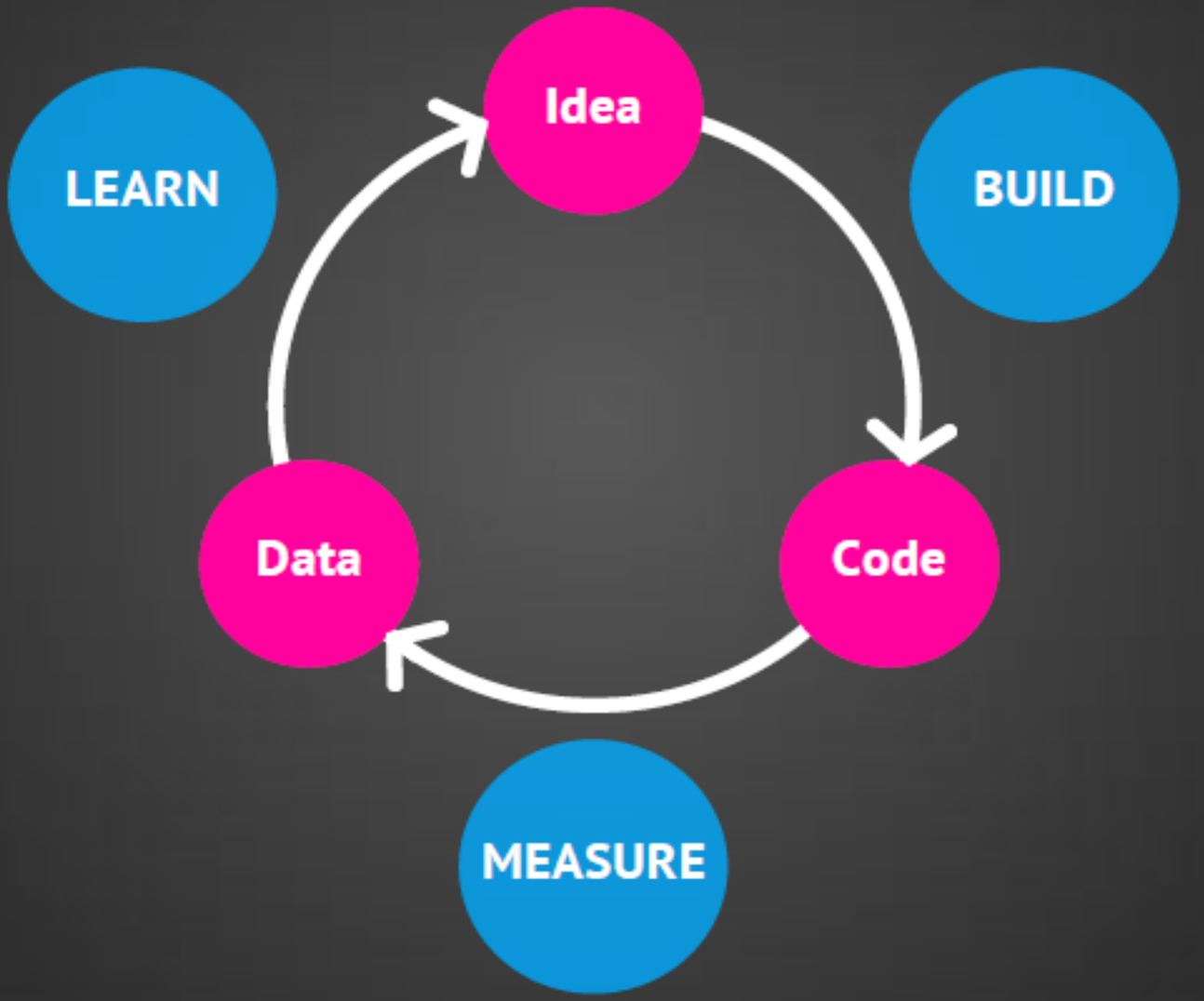
REVENUE MODEL
(ERLÖSMODELL)

BUSINESS MODEL CANVAS



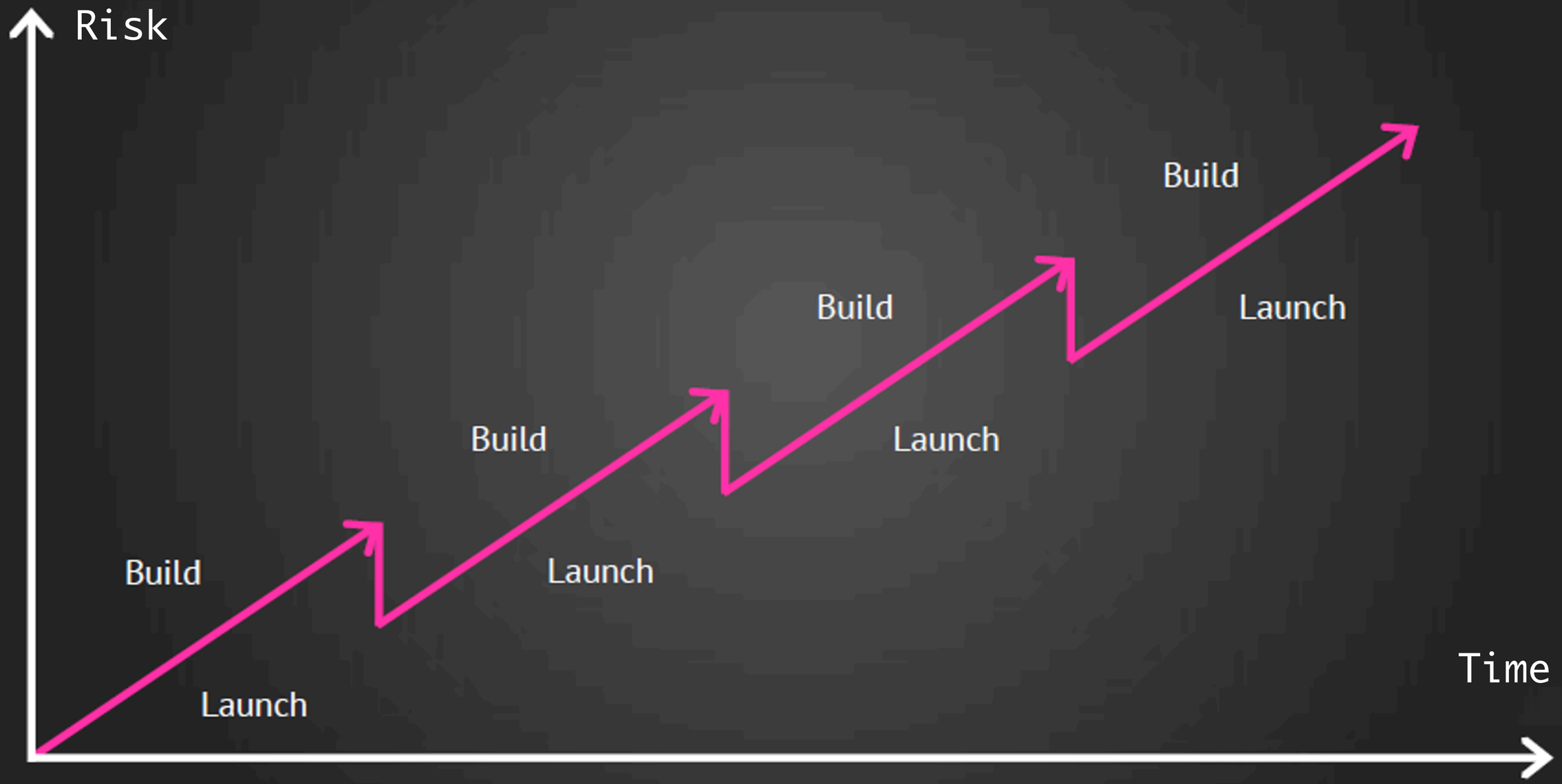
LEAN STARTUP

https://www.youtube.com/watch?v=QaoVWtLX038



LEAN STARTUP reduces risks

iterative, incremental, hypothesis driven (validation)



LEAN STARTUP

Does the product solve the customer's problem?

Does our value proposition work?

Which features are particularly important for the customer?

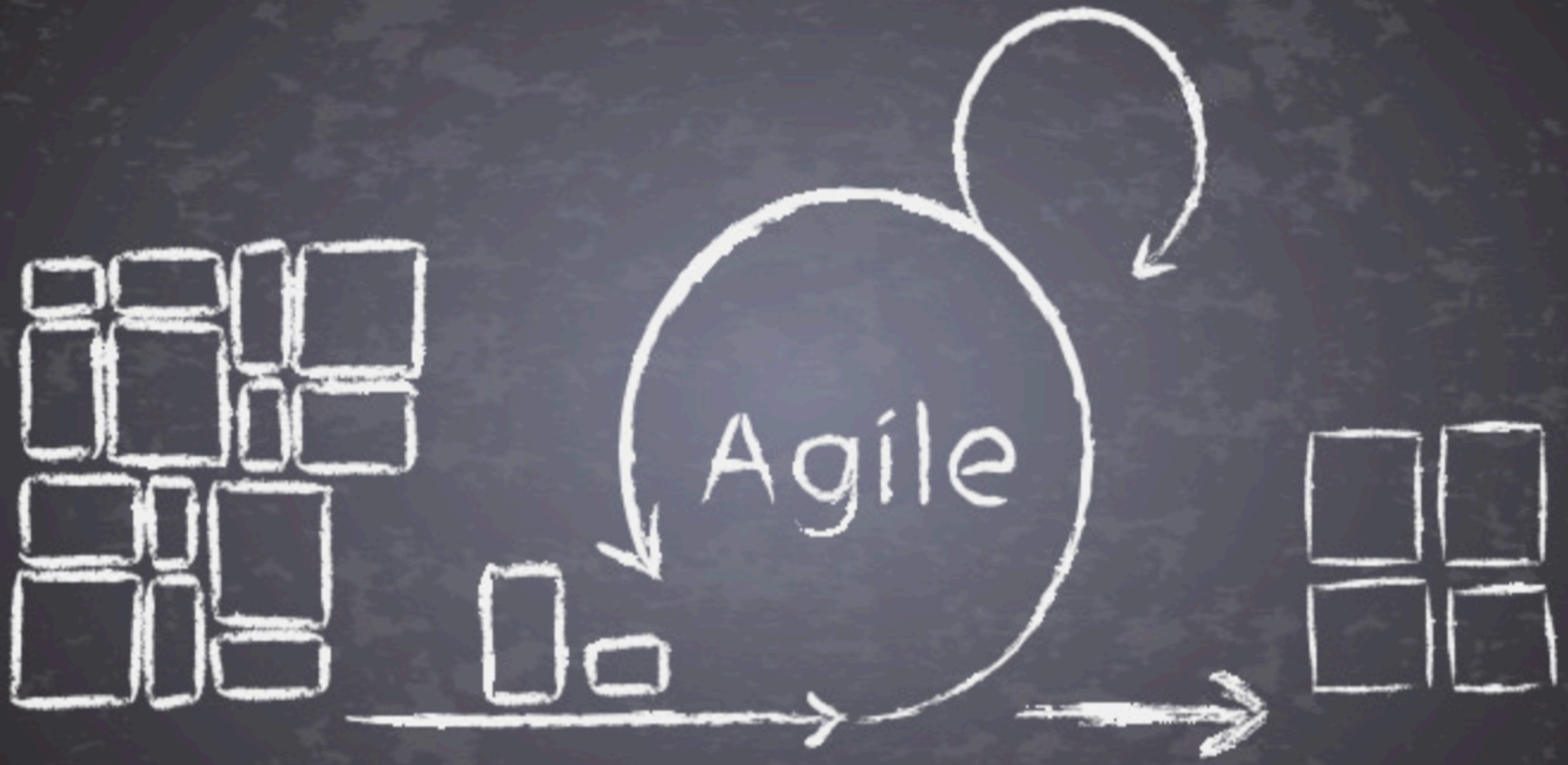
Who is our core target group?

Is the user willing to pay for the product?

Is there a relevant market for our product?

Do we have a viable business model?

SCRUM: THE CLASSY OF THE AGILE METHODS



https://www.youtube.com/watch?v=RaaBrPCo_Mw

Thank you!

Thomas Nagel

https://www.linkedin.com/in/thomas-nagel-digital-leader