

# Avant Edge

## Why Team Stability is the Answer to Getting Hardware Product Developments Done

Ali Hajou - 19 September 2024

# Welcome, Willkommen, Bonjour, Hallo...

Hola, Zdravstvuyte, Nǎn hǎo, Olá, Dzień dobry, Namaste, Konnichiwa

Ali Hajou - Agile Nerd

- (Agile) Transformation Architect and Partner at Avant Edge
- SAFe Practice Consultant Trainer (SPCT) at Keron
- Senior trainer in various Agile Frameworks: Scrum, Kanban, 6σ, SAFe, Spotify, Agile in hardware
- MSc Business Informatics - Thesis: Agile in Pharma
- Acronyms: SPCT, RLC, PSM, PSMO, SPS, L6σ, RTE
- Loves BBQ Sauce
- Experience in applying Agile in hardware environments of:
  - ASML
  - NXP
  - Schneider Electric
  - Vanderlande
  - And more...





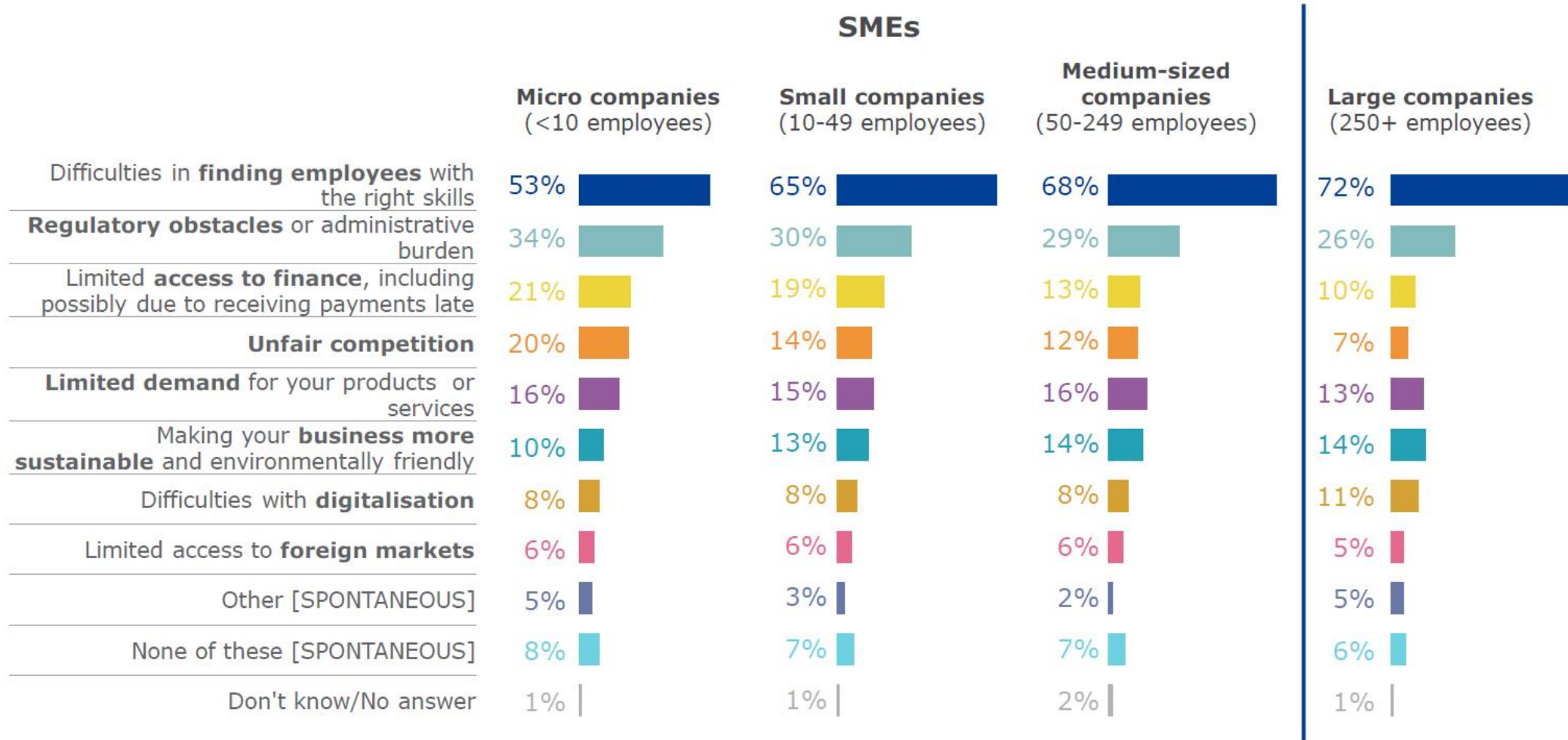


**Let me start with a disaster**



# Eurobarometer – 14 Nov '23

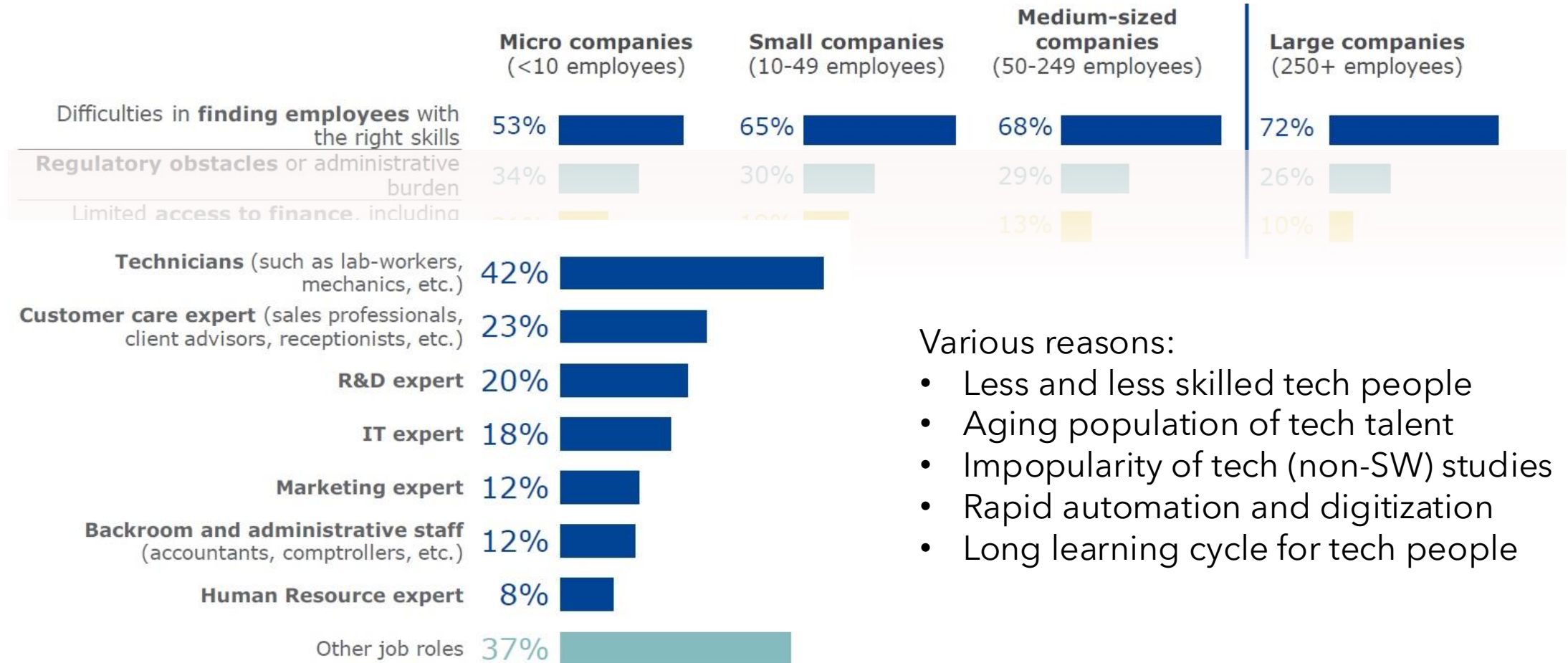
*“Skills shortages are a serious problem for majority of EU SMEs”* – European Commission



Source: <https://europa.eu/eurobarometer/surveys/detail/2961>  
 Base: all SMEs (n=13253) & all large companies (n=855)

# Eurobarometer – 14 Nov '23

“Skills shortages are a serious problem for majority of EU SMEs” – European Commission



Various reasons:

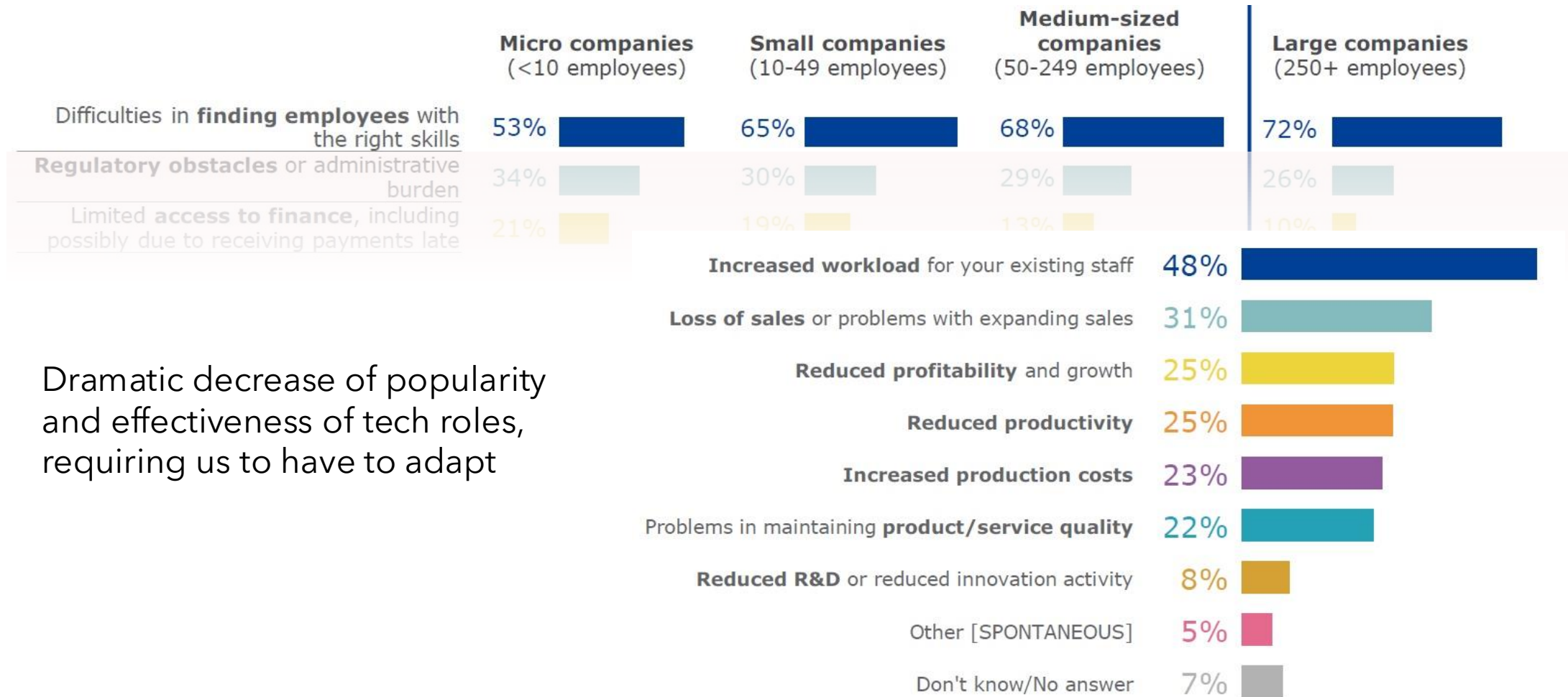
- Less and less skilled tech people
- Aging population of tech talent
- Impopularity of tech (non-SW) studies
- Rapid automation and digitization
- Long learning cycle for tech people

Source: <https://europa.eu/eurobarometer/surveys/detail/2961>

Base: for each job role, SMEs in which the job role exists (n=732 to 8 369)

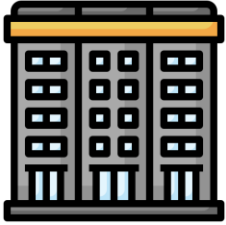
# Eurobarometer – 14 Nov '23

*“Skills shortages are a serious problem for majority of EU SMEs”* – European Commission



Dramatic decrease of popularity and effectiveness of tech roles, requiring us to have to adapt

# The European Manufacturing contributes to



> 2 mil enterprises



> 6 tril in turnover



15% share of EU-27 GDP in  
2022



> 32 mil jobs



~14 mil jobs in growing high-  
tech manufacturing



82% of EU exports in 2021

# Agile has become the industry standard

for values, principles, and models for collaboration and value delivery

**Sectoral share of the number of enterprises within the business economy**  
(%, EU, 2021)

Where we  
see a  
'knock-on  
effect'



Where we  
started,  
generally

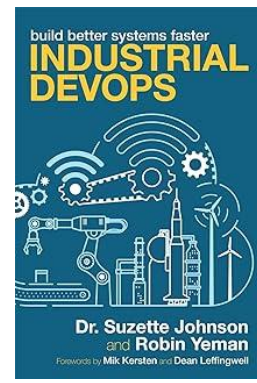
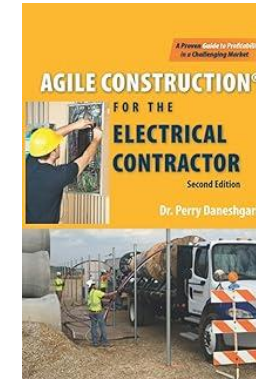
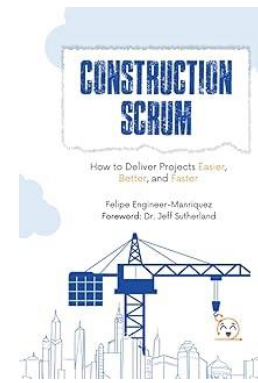


Source: Eurostat (sbs\_sc\_ovw)

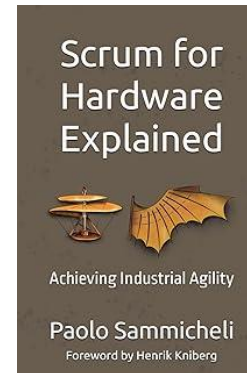
The total number of enterprises in the EU business economy was 31.0 million in 2021



# As the need for Agility is growing...



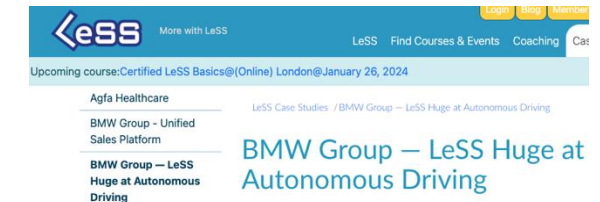
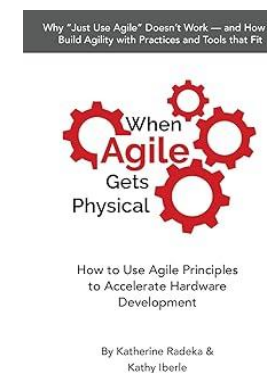
Distrib  
Professional, scientific and techn  
C  
Human health and social wo  
Ma  
Accommodation and food servic  
Administrative and support servic  
Real esta  
Other personal servic  
Transportation &  
Information and com  
Arts, entertainment and  
Financial and insuranc  
Repair of computers and personal and house  
Electricity, gas, steam and air condition  
Water supply; sewerage, waste m  
Mining and



## Lessons from Schneider Electric's Agile-at-Scale Transformation

NOVEMBER 09, 2021  
By Vinciane Beauchene, Daniel Gheno, and Eric Fournier

📄 📱 T T f in X ✉



# Agile has been in use in HW companies

Don't believe me, do your research, and you will find way way more...

Steelcase

ThermoFisher  
SCIENTIFIC

OSRAM

SIEMENS  
Healthineers



BOSCH

PHILIPS

Telefónica



PORSCHE

Seco



ASML

Breville

SUNPOWER®



SAAB

Schneider  
Electric



Trimble

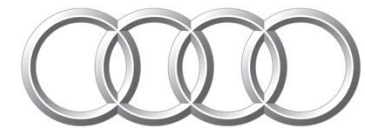
Mercedes-Benz

VANDERLANDE

novo nordisk®



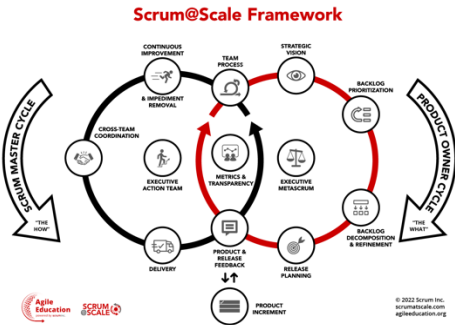
RENAULT



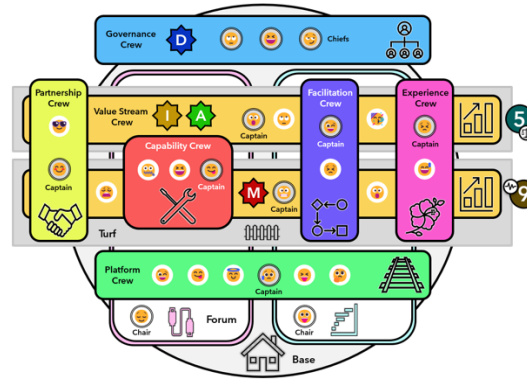
Audi

# But beware...

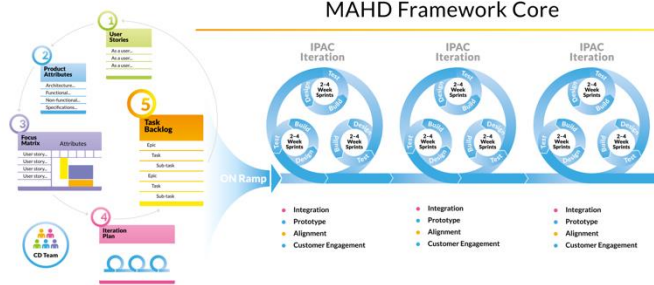
## ... Not to not fall in the Framework-discussion trap



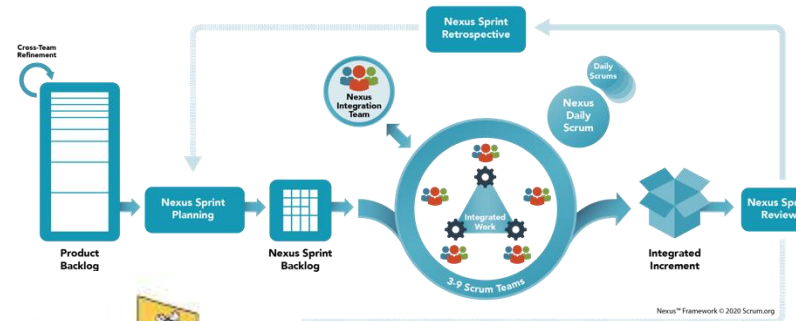
Scrum@Scale



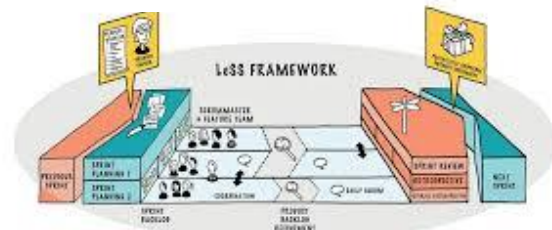
UnFix



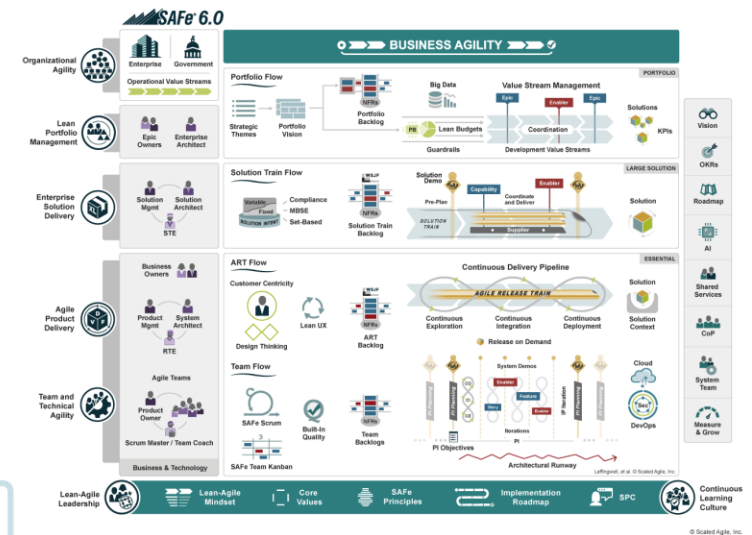
MAHD



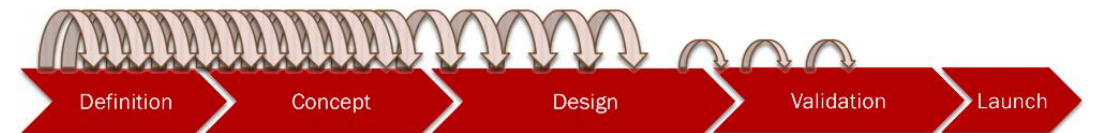
Scrum



LeSS



SAFe



Rapid Learning Cycles



# There are simply too many frameworks out there

- Acceptance Test Driven Development (ATDD)
- Agile Business Analysis (AgileBA)
- Agile Digital Services (AgileDS)
- Agile Fluency
- Agile Modeling (AM)
- Agile Portfolio Management (APfM)
- Agile Project Management (AgilePM)
- Agile Rational Unified Process (RUP)
- AgileSHIFT
- Agility Scales
- Bimodal Portfolio Management (Bimodal PfM)
- Continuous Integration/Continuous Deployment (CI/CD)
- Crystal
- Design Thinking
- DevOps (including variants such as DevSecOps and BizDevOps)
- Disciplined Agile (DA)
- Dynamic Systems Development Method (DSDM)
- Enterprise Scrum
- Evidence Based Management (EBM)
- Experiment-Driven Development (FDD)
- eXtreme Programming
- Feature Driven Development
- Holocracy
- Kanban
- Large Scale Scrum (LeSS)
- Lean Management
- Lean Startup
- Management of Portfolios (MoP)
- Method œ
- Modified Agile for Hardware Development (MAHD)
- Nexus
- Open Space Agility (OSA)
- OpenUP
- Praxis (for the Dutchies; no this is not the DYI store)
- Prince2 Agile
- Project Half Double
- Rapid Learning Cycles (RLC)
- Recipes for Agile Governance in the Enterprise (RAGE)
- Scaled Agile Framework (SAFe)
- Scaled Agile Lean Development (ScALeD)
- Scrum
- Scrum at Scale
- Scrum for Construction
- Scrum of Scrums (even though these days it is Scrum at Scale)
- ScrumBan
- ScrumXP
- Sociocracy
- Spotify Model (although not a model)
- Standard for Portfolio Management (SfPfM)
- Test Driven Development (TDD)
- Behavior Driven Development (BDD)
- Toyota Production System
- UnFix
- User Experience Design
- ...



OK, now what?

# Organize around your product (architecture)

Rather than assembling teams around temporary projects



Project Lead 1



Project Manager 2



Engineer



Product Lead 3





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Rather than assembling teams around temporary projects



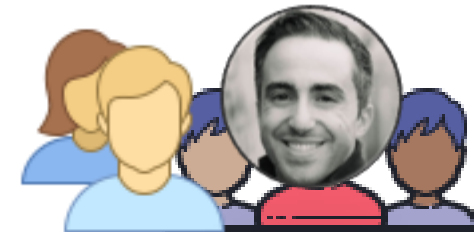
Project Lead 1



Project Manager 2



Product Lead 3



Stable Team  
using Agile principles  
and practices



**23 April 2021** - Frits van Hout (EVP and Chief Strategy Officer) retires from ASML

Source: <https://www.asml.com/en/news/stories/2021/frits-van-hout-retires-from-asml>





**Farewell to a “big  
family of top-class  
people”**



After a dynamic career spanning close to four decades, of which 29 years were spent at ASML, ASML Executive Vice President and Chief Strategy Officer Frits van Hout will retire on April 29, 2021. From his office in Veldhoven, Frits reflects on the past and looks to the future.

### **What made ASML stand out?**

"With our excellent team of engineers, we did something that was unique and different from our competitors: We took a modular approach, where we thought about the high-level system structure before we designed and built the individual subsystems. This technique - which originated from software development - led to a very structured way of working, with well-defined interfaces and a system that actually worked when we put it together."

"We were forced into this approach because we didn't have a factory of our own, and I think that is by far the best decision we ever made. A modular approach has benefits throughout the life cycle, from debugging a system when you design it, to shipping it and then maintaining, upgrading and even recycling it. It allows you to do a lot of work outside your own company."



# How ASML became Europe's most valuable tech firm

21 February 2023

Share 

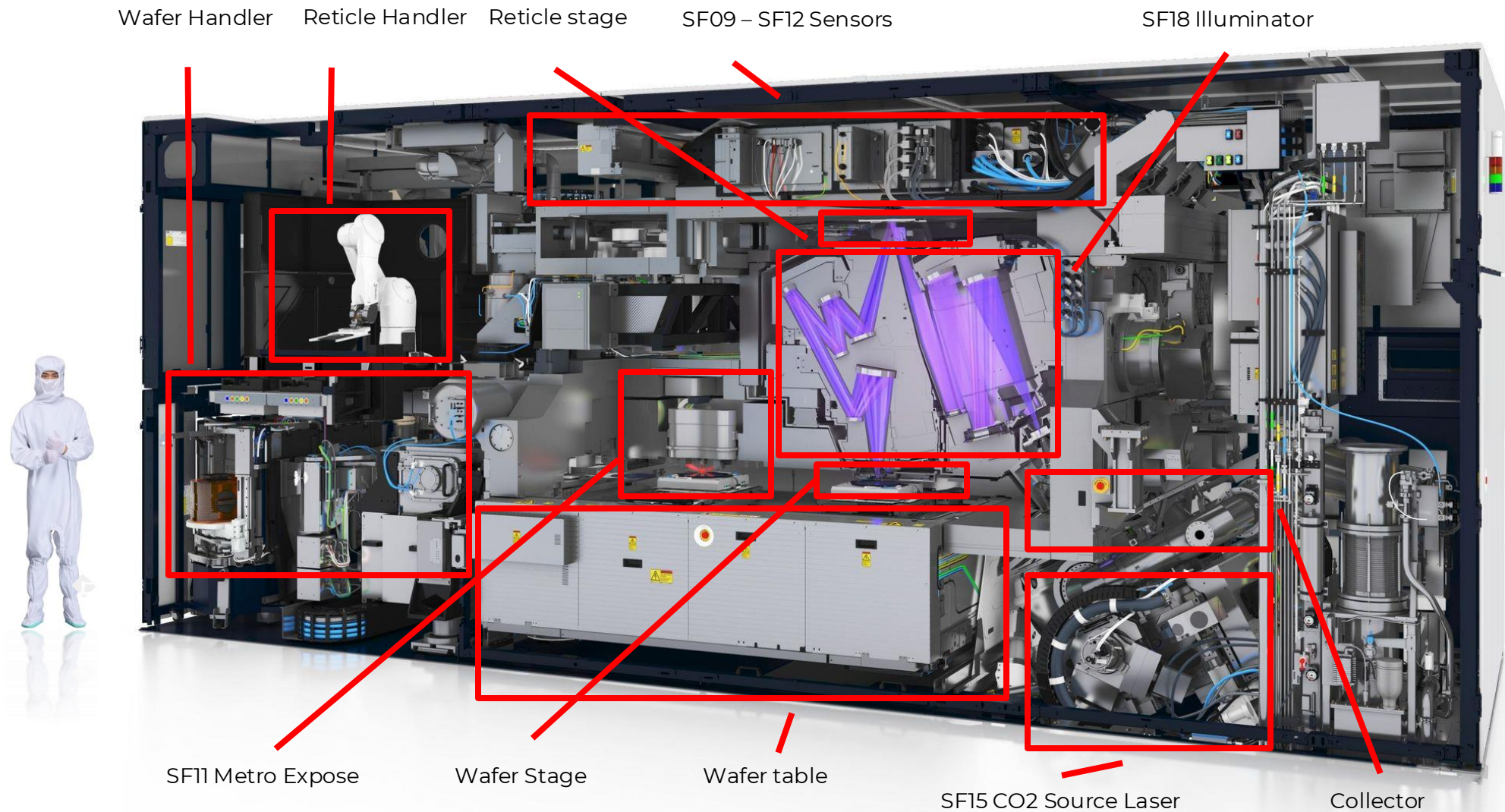
**Carmel O'Grady & Matthew Kenyon**  
Business Daily



The plant where ASML makes the machines that print the world's most valuable computer chips



A modular approach, with an aligned high-level system structure and interfaces, and testable individual subsystems (SF's, or System Functions). Where each team surfaces on a bi-weekly basis on the 'knock-on effects' of their own design decisions.



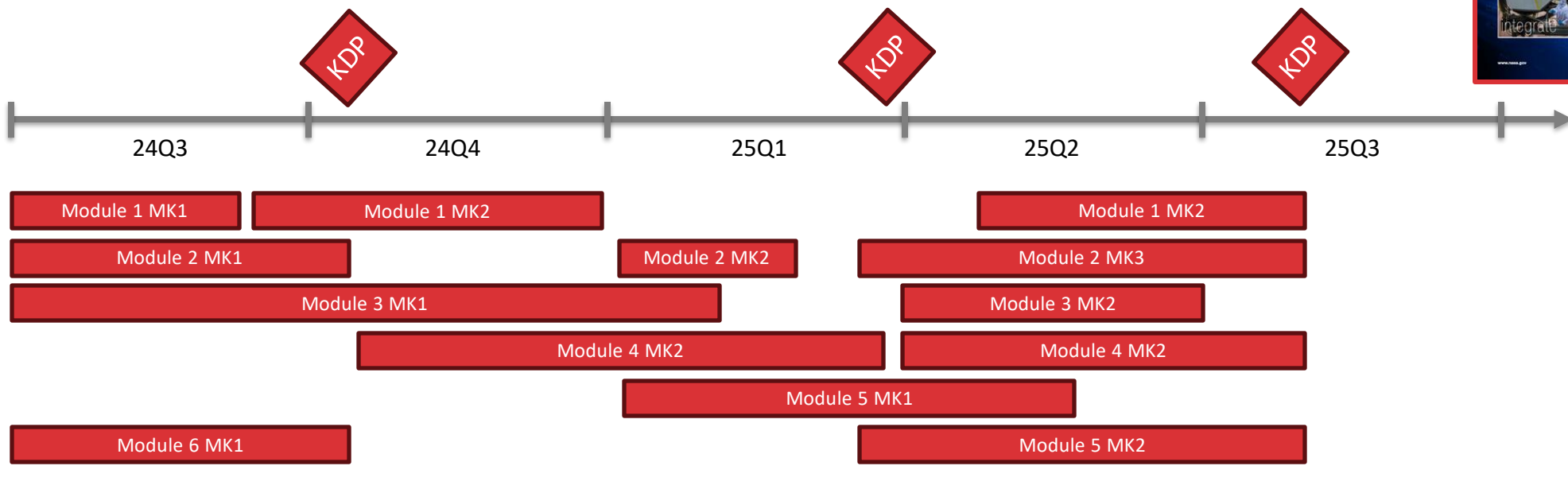
Source: asml.com and presentations from RTE Summit 2021 and RTE Summit US 2024



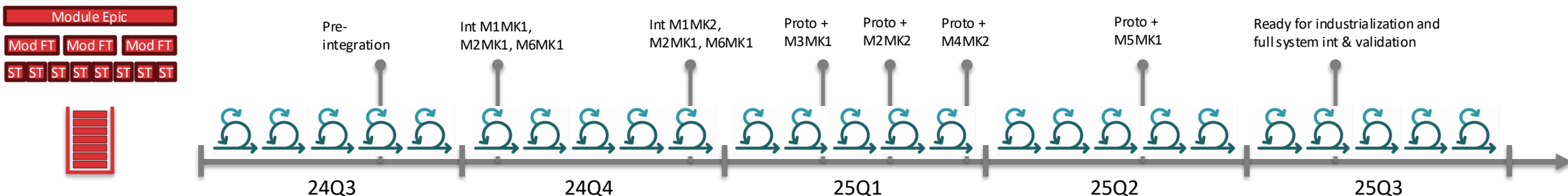
Connecting **long-term “backwards”** planning to **short-term and iterative “forward”** planning following **NASA Systems Engineering Handbook** guidance, **iterative design**, and **interface management** for **frequent risk reduction**



Backwards planning



Forward planning



Disclaimer: Hypothetical setup and planning

# I will leave you with one question...



How does 'team *instability*' harm your product deliveries?

# Thank you so much

Feel free to stay in touch, or get access to a pre-read of my book



Sign-up for book  
freebees!



Ali Hajou

<https://www.linkedin.com/in/alihajou/>