Managing Software Products in a Global Context

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Vector Group is global market leader in automotive software (AUTOSAR) and engineering toolchain with 2.500 employees

Vector Consulting is supporting clients worldwide

- Product development, IT and change management
- Competences, transformation, processes, tools
- Agile, Cybersecurity, Safety, SPICE, Requirements, etc.

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1. Welcome

2. Industry Challenges

3. Benchmark: Global Context

4. Summary and Outlook
Challenge: Complexity and Competences

50 years of software engineering

- Radio
- Anti-lock brakes
- Engine control
- Trip computer
- CAN
- Radio...
- Electric powertrain
- Infotainment
- Adaptive cruise control
- Traction control
- Start/Stop automatic
- Pedestrian break assist
- Head-up display
- Electronic brake control
- Remote diagnostics
- AUTOSAR
- Anti-lock brakes
- Engine control...

- Mobility services
- Autonomous driving
- Brake-by-wire
- Steer-by-wire
- Connectivity, Vehicle2X
- Cloud computing
- 5G mobile communication
- Online Software Updates
- Fuel-cell technology
- Laser-sourced lighting
- 3D displays
- Gesture HMI
- Ethernet/IP backbone
- Electric powertrain
- Adaptive cruise control
- Lane assistant
- Start/Stop automatic
- Emergency break assist
- Head-up display
- Electronic brake control
- Remote diagnostics
- AUTOSAR...

Time

1940 1960 1980 2000 2020
Industry Challenges

Challenge: Competition and Cost

What do customers really expect?

“We want our partners to bring fresh ideas and **challenge our thinking**, not just take orders”

“We suppliers must **help us create an operating strategy** and model that is consistent with our business strategy. Then they **help us execute it**, and in some cases **operate it**, end to end – with shared outcomes”

“Customers dictate **price reductions** over 10% per year to suppliers in the high-tech sector.”
Agenda

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**Benchmark – Companies**

**Companies**
- B2B solution and product business on a global scale
- Critical systems in ICT, energy, medical, industry systems
- 25% have each over 100,000 employees world-wide
- Rest has each over 1,000 employees

**Data gathering**
- Annual survey: >2000 recipients, >6% response rate
- Interviews: with decision makers, done by same person life or per telephone, based on a fixed questionnaire
- Anonymously without the promise to share the results

**Consolidation**
- Confidential consolidation
- Clear separation of hard facts and recommendations
- Independent reviews of data and consolidation

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**Benchmark: Global Context**

- IT; 42%
- Services; 8%
- Embedded; 25%
- Systems; 25%
Industry Trends 2018: The Rule of the Magic Triangle

The magic triangle remains the key challenge – even after 50 years of software engineering.
Benchmark: Global Context

Survey Results: Software Technology Impact Now and Tomorrow

Software technologies with most impact over the past decades

1. Internet technology and applications
2. Software engineering and processes
3. Reuse, components, and patterns
4. Mobile computing
5. Digital transformation and big data
6. Artificial intelligence and machine learning
7. Agile development
8. Parallel and distributed processing, multicore
9. Open source software
10. Social networks

Major game changers in the near future

1. Artificial intelligence and machine learning
2. Connectivity and IoT
3. Digital transformation and big data
4. Autonomous software and agents
5. Mobile computing
6. Internet technology and applications
7. Agile development
8. Model-driven development
9. Parallel and distributed processing, multicore
10. Open source software
Interview Results: Product Management Role

Vision and Ambition

- 58% of companies have vision that a product manager is end-to-end responsible for success of the product.

Reality

- Only 33% are actively implementing this vision.
- Different role patterns across companies
- Other roles such as project manager have much clearer definition and roles.
- 42% have actually P&L responsibility delegated to the product managers.

While there is a big need for strong product management, it is overlooked in practice.
Vast majority of companies...
- ...manage an **existing product**, not new products and green-field innovations.
- ...use **globally distributed teams**
- ...moves towards “**agile**”, often with **unexpected implications**

Product management...
- **varies across companies** and often inside a company, from being part of R&D or marketing to being the business manager with P&L responsibility for a product.
- **evolves towards solutions**, i.e., demanding more needs focus, and packaging tailorable products with services

Product development today is mostly global – with lots of agile traps
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Managing Software Products in a Global Context > Agile Innovation

- Flexible business models
- Eco-system collaboration
- Bio-computing
- Tiered software stacks
- Run-time technology
- Agile development
- Growing governance
- Life-long learning

Thank you for your attention.
For more information please contact us.


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