Gaining maturity in Open Source
– a model cased on Sony Mobile's journey

Open Source Summit Europe 2018
Monday, October 22nd

Carl-Eric Mols, Sony Mobile

Agenda

- Personal introduction
- The Sony Mobile Open Source journey
- Sony Mobile's Open Source engagements today
- Open Source today
- The Open Source Maturity model
- The Open Source SCALARE Canvases
  - Engineering driven - or "How to extract value to your **product**"
  - Business driven – or "How to extract value from your **ecosystem**"
- Industrial Open Source
- The future
- Final words – Key take away
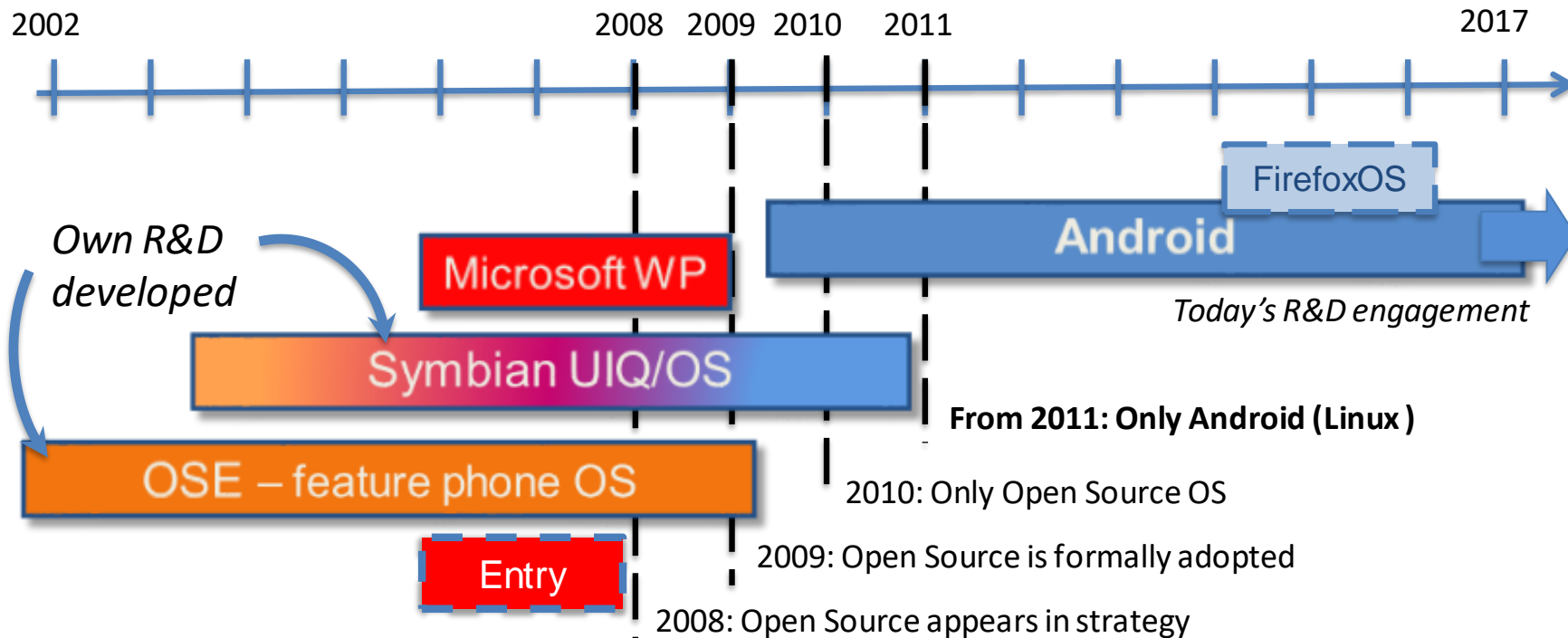
Some notes on me

Carl-Eric Mols
Head of Open Source
Sony Mobile

- MSEE studies at Lund Institute of Technology (LTH), Sweden.
- Most of the career life spent on Telecom's SW Engineering, the first 12 years promoting a **formal methods based modeling tool**.
- Joined **Sony Ericsson** (now **Sony Mobile**) in 2004.
- Was in 2007 appointed to Software Strategist.
- Became in 2008 the **"Open Source Czar"***, with the assignment to company-wide pave the way for Open Source in Sony Mobile.
- As the leading **Open Source Officer*** of Sony Mobile, I have spent the last ten years promoting, inside and outside the company, Open Source culture – which is anything but formal!
- Yet – as engaged in the ITEA 2 research project **SCALARE*** – I have tried to "formalize" some of the Open Source phenomena ….

*) more to come!

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The Sony Mobile Open Source journey
- a timeline on OS for mobiles

2002   2008   2009   2010   2011   2017

FirefoxOS

Android

Own R&D developed

Microsoft WP

Symbian UIQ/OS

Today's R&D engagement

From 2011: Only Android (Linux)

OSE – feature phone OS

2010: Only Open Source OS

Entry

2009: Open Source is formally adopted

2008: Open Source appears in strategy

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Sony Mobile's Open Source engagements today

TOOLS
(Gerrit, Jenkins, etc.)

Applications

ANDROID

Linux

Upstream Components
(Chromium, etc.)

+ Miscellaneous

Dev. World Sample Code, Engineers' side projects, Open Device Project, etc.

IS/IT
(Ubuntu, Apache, etc.)

+ New frontiers

AI/ML, Big Data, Cloud, IoT – and Drones!

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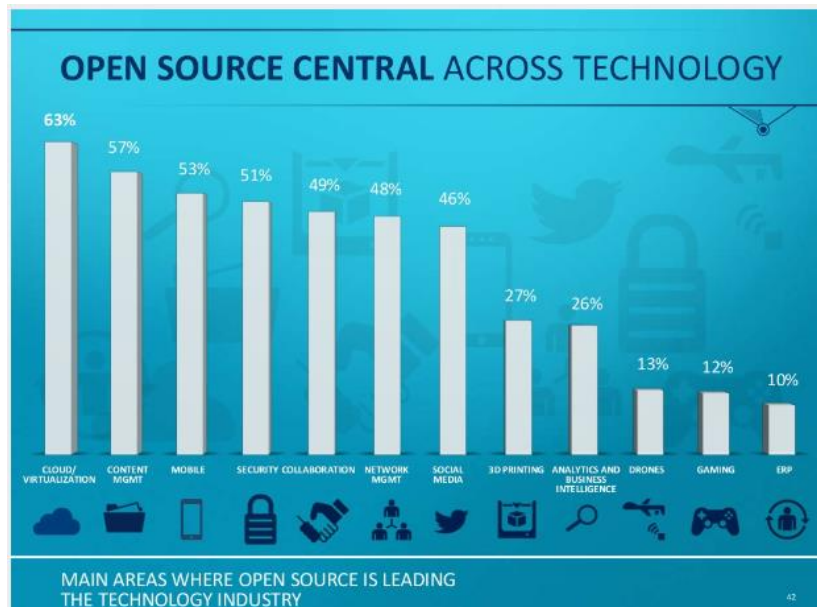
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Open Source today – it's exploding!
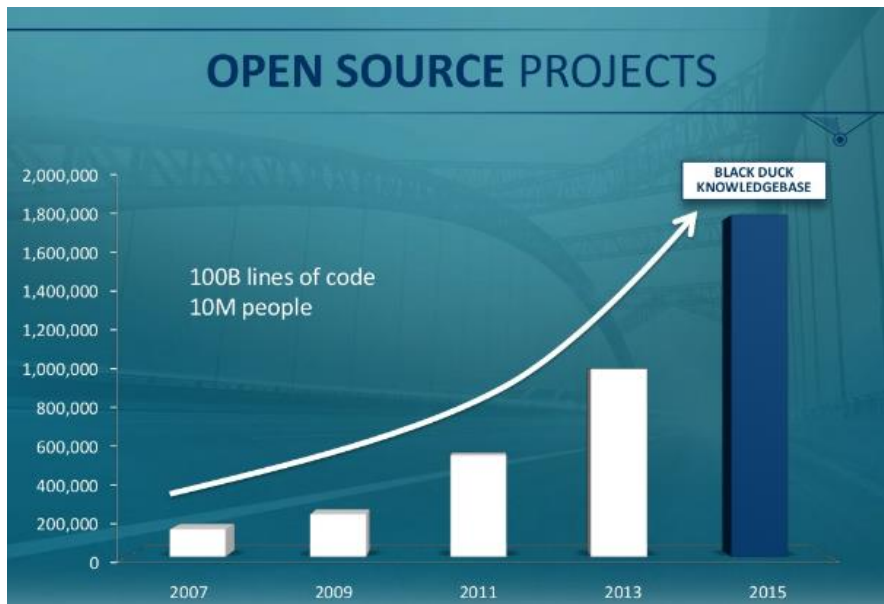
Reference: Black Duck Software Inc

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Reduce Cost & TTM   Global Development   IoT   Merge of domains

A layered view on Open Source Software

Open Source is not only about

- *Code & License*
- *Development Model & Culture*
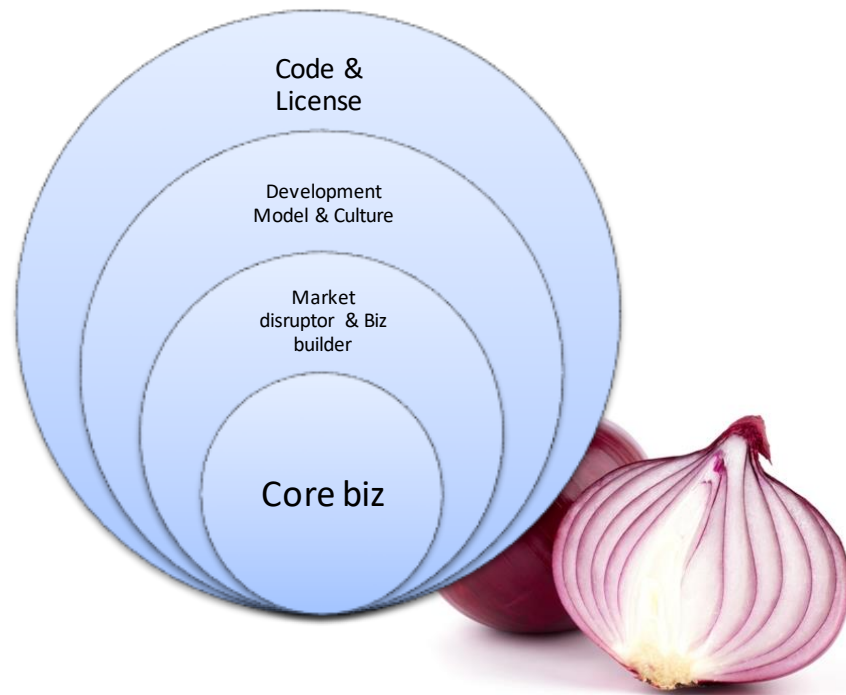- *Market disruptor & Biz builder*

Open Source Software =

Code & License

+ Development Model & Culture

+ Market disruptor & Biz builder

Affecting the core business offering

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The Open Source Maturity Model

Originating from Sony Mobile

Value for the company

Business driven

5. Prevail
Leadership through new initiatives

4. Collaborate
Co-creating business value

Engineering driven

3. Directed
Active and contributing

2. Repetitive
Policy, processes and training

1. Accidental
Discovery and awareness

Effort for the company

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- A 3-year Industrial EU research project by ITEA* (2013-16)
  - *Information Technology for European Advancement
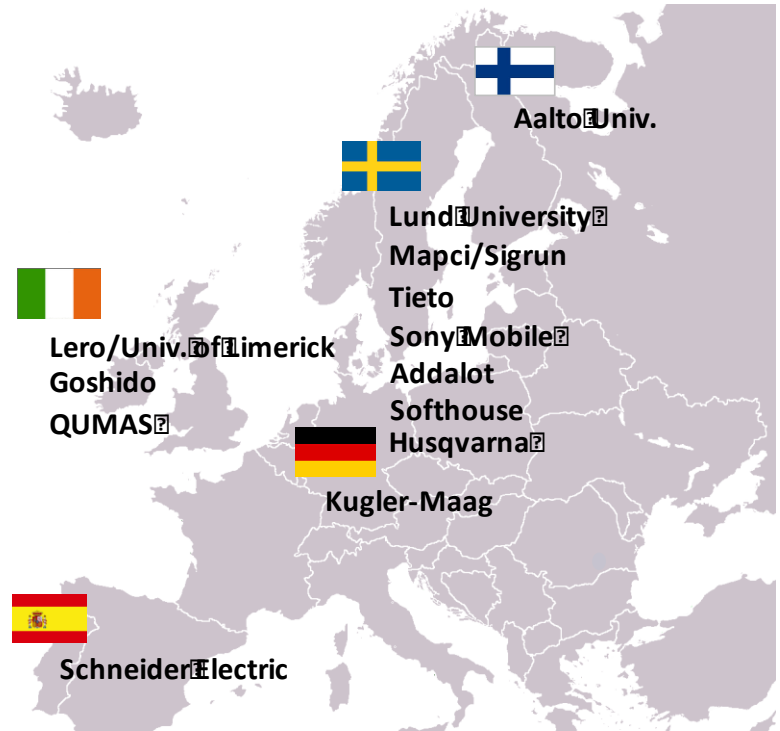 - Swedish participation was funded by **Vinnova**, the Swedish Governmental Innovation Agency
- Supporting the industry in SCALing softwARE capabilities
- Consisted of 10 companies and 3 universities in 5 countries

SONY

Sony Mobile shared its experience on the introduction of Open Source as the core part of its offerings of smartphones and smartwear.

Aalto Univ.

Lund University
Mapci/Sigrun
Tieto
Sony Mobile
Addalot
Softhouse
Husqvarna

Lero/Univ. of Limerick
Goshido
QUMAS

Kugler-Maag

Schneider Electric

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Scaling scenarios

DRIVERS

Product

Organization

Process

Proprietary → Open Source

HW → SW

Small & local → Large & global

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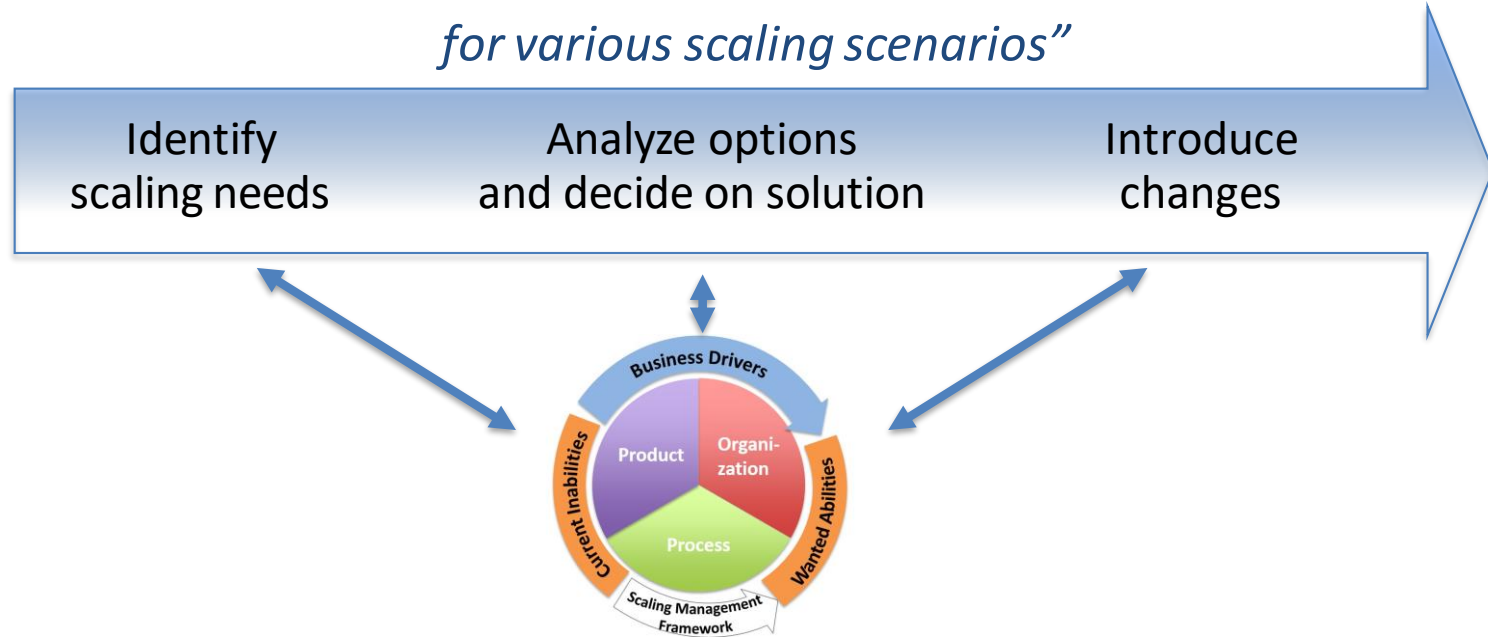
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SCALARE in a nutshell

*"To **provide systematic guidance to decision makers,***

for various scaling scenarios"

Scaling Management Framework (SMF)

The SMF Canvas

- The SMF Canvas is a 2D graphical representation of the Scaling Management Framework.

- Uses color coded Post-It notes for charting software business Patterns in the three domains

Driver

Drivers

Inability, Growing pain

Current Organization

Name of the Scenario

Wanted Organization

Achieved ability

Current Inabilities and Growing Pains

Current Process

Transformation

Wanted Process

Wanted Abilities

Problem part of a pattern

Current Product

Pattern

Wanted Product
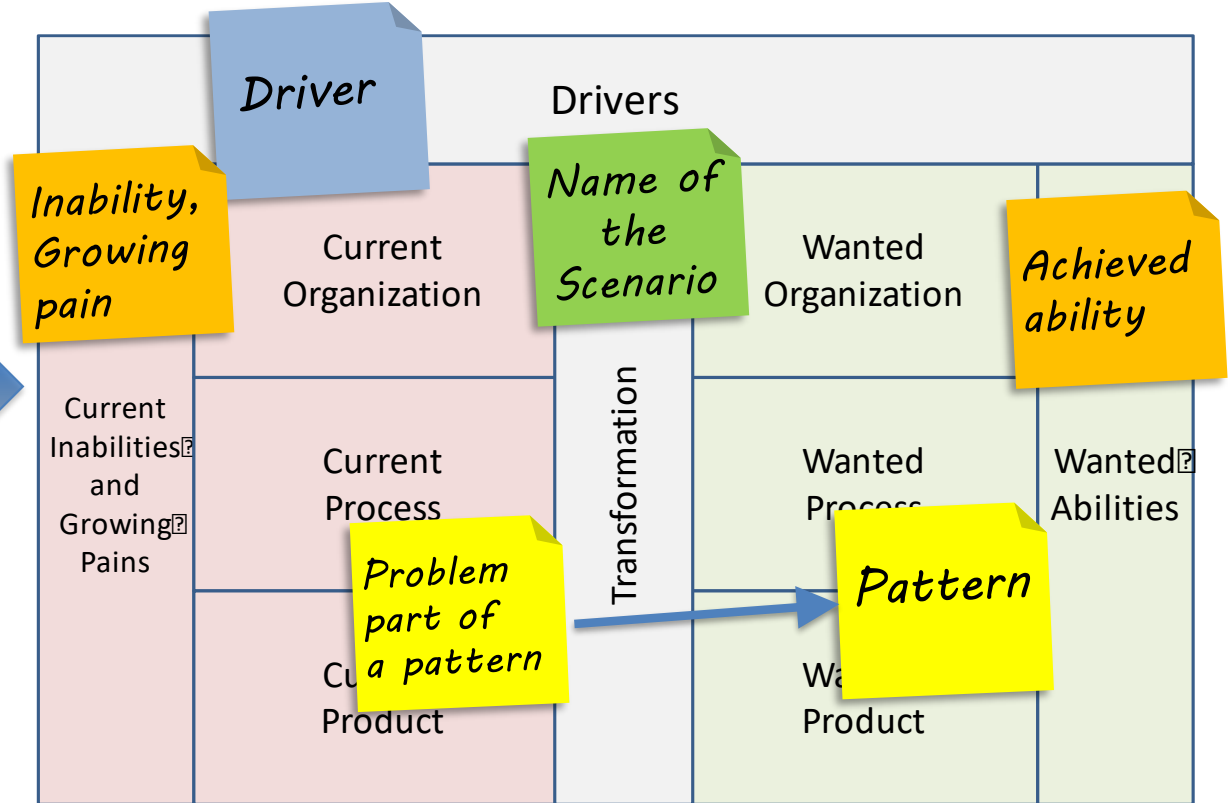
Scenarios

- Basic Software Engineering
- Agile Development
- Servitization
- Deliver 24/7
- **Open Source**
- Outsourcing
- Offshoring

From the Maturity Model to the SMF
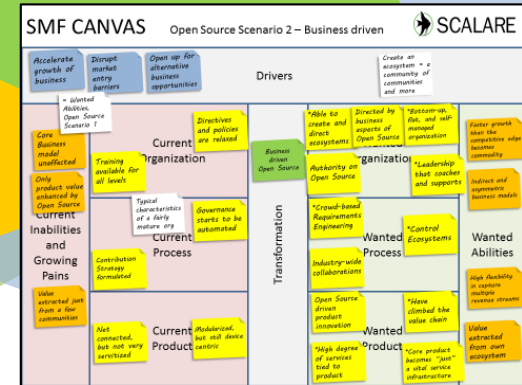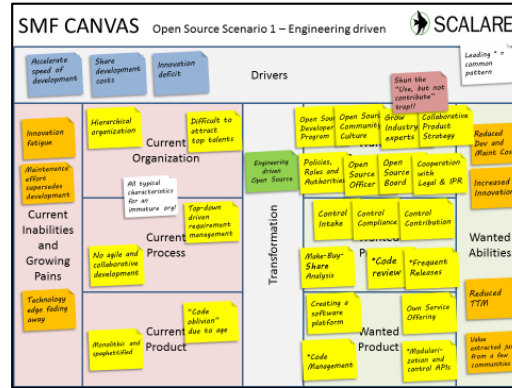
Open Source, Engineering Driven
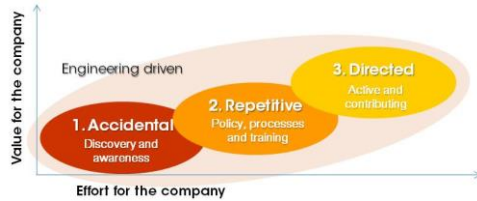
- Based on the external Maturity assessment made in 2014 at Sony Mobile.

- 14 unique OSS Patterns identified + 4 common.

- Clarified where and what to find value extraction.

- **Key achievement: Product value extracted from Open Source communities.**

SMF CANVAS — Open Source Scenario 1 – Engineering driven — SCALARE

Drivers

- Accelerate speed of development
- Share development costs
- Innovation deficit
- Shun the "Use, but not contribute" trap!!
- Leading * = common pattern

Current Organization
- Innovation fatigue
- Hierarchical organization
- Difficult to attract top talents

Current Inabilities and Growing Pains
- Maintenance effort supersedes development
- Technology edge fading away

Current Process
- All typical characteristics for an immature org!
- Top-down driven requirement management
- No agile and collaborative development

Current Product
- Monolithic and spaghettified
- "Code oblivion" due to age

Transformation

Wanted ...
- Engineering driven Open Source
- Open Source Developer Program
- Open Source Community Culture
- Grow Industry experts
- Collaborative Product Strategy
- Policies, Roles and Authorities
- Open Source Officer
- Open Source Board
- Cooperation with Legal & IPR

Wanted P...
- Control Intake
- Control Compliance
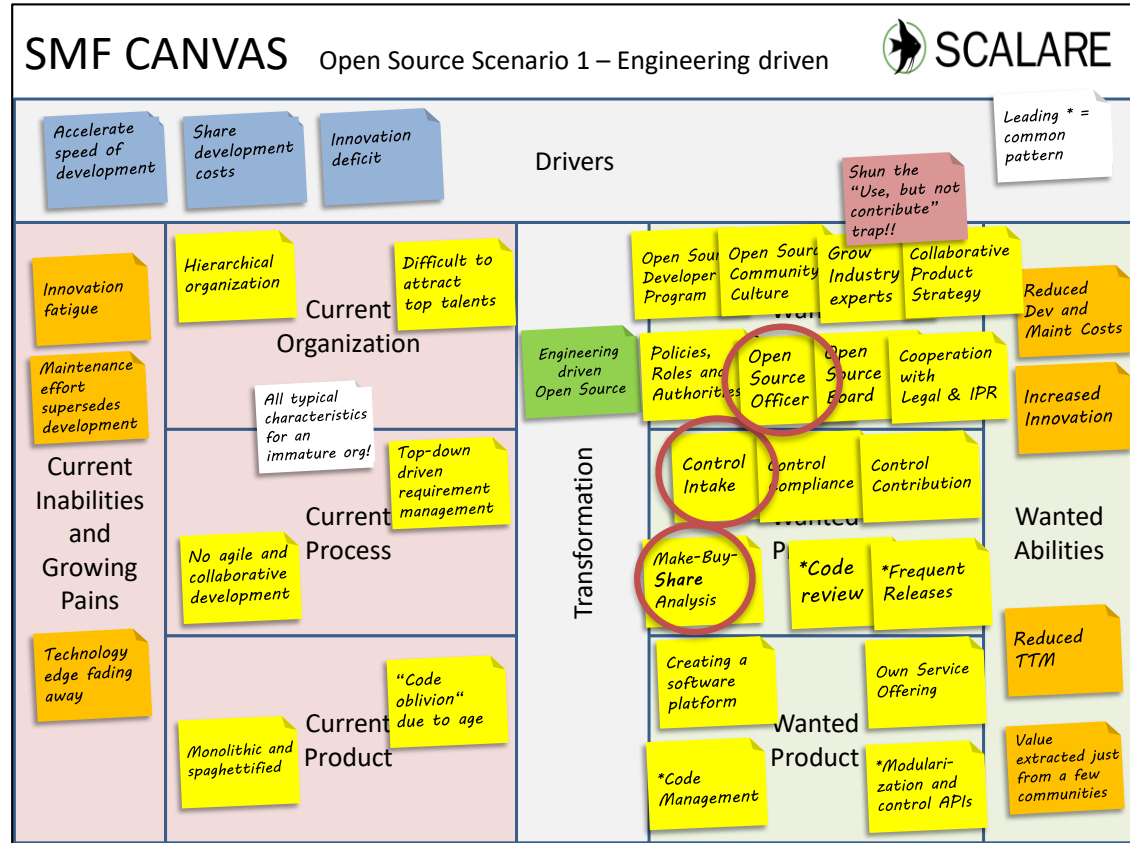- Control Contribution
- Make-Buy-Share Analysis
- *Code review
- *Frequent Releases

Wanted Product
- Creating a software platform
- Own Service Offering
- *Code Management
- *Modularization and control APIs

Wanted Abilities
- Reduced Dev and Maint Costs
- Increased Innovation
- Reduced TTM
- Value extracted just from a few communities

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The Pattern "Control Intake"

Process example - a checklist:

- **Why?** – Just happening or a **Conscious** decision?

- **What?** – *Make-Buy-Share* strategy

- **Availability** of Open Source

- **Handling risks**
  - License compliance → possible rework
  - Intelligent Property Rights (patents)
  - Security threats
  - Maintainability of "dead" code (inactive community)
  - Dependencies and lost control

- **Different sources** – e.g. through suppliers

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The Pattern "Make-Buy-Share"

	Make	Buy	Share
Differentiator	Keep market advantage	No dependency on external parties	Market advantage lost
Qualifier	No need to re-invent the wheel	Most cost effective to use existing Software	Area of innovation Interest?
Commodity	Not cost effective	Why pay for what is freely available?	Most cost effective to use open source

Your Product/System

Availability

Cost

Strategy

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The Pattern "Open Source Officer"

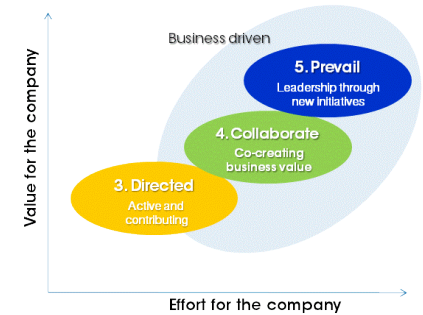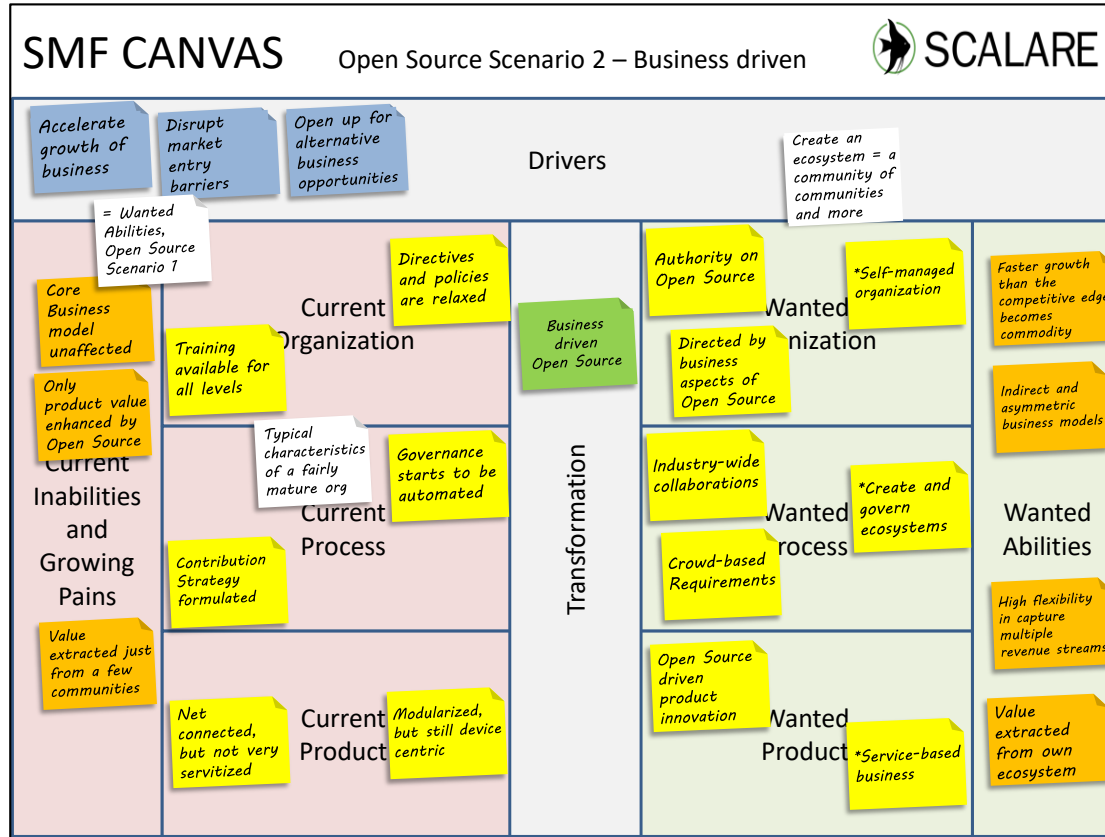Software Engineering competence

Legal and IPR competence

Managerial and organizational competence
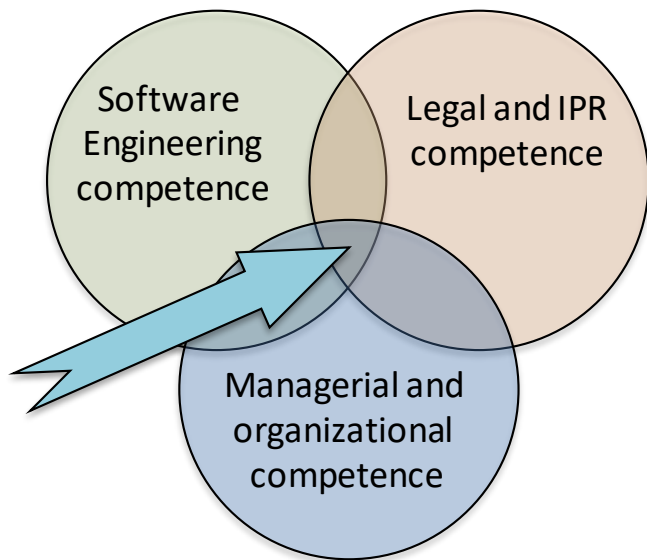
- The Open Source Officer role is for **bridging the gaps** between a risk-averse company management, an legally ignorant software development and a reactive legal entity.

- Prime responsibility for the Open Source Officer role is to evolve and **drive a company's Open Source Maturity** in both engineering as well as in business aspects.

- Tools of the trade involves the development and maintenance of Directives, Policies, Processes, Guidelines, Training – and Open Source Maturity Models.

- Often chairs/coordinates organizational bodies for governing Open Source, e.g. an "Open Source Board".

- Naturally becomes the contact point for external parties regarding anything related to Open Source.

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Open Source, Business Driven

SMF CANVAS — Open Source Scenario 2 – Business driven — SCALARE

Drivers

- Accelerate growth of business
- Disrupt market entry barriers
- Open up for alternative business opportunities
- Create an ecosystem = a community of communities and more

= Wanted Abilities, Open Source Scenario 1

Current Organization
- Core Business model unaffected
- Only product value enhanced by Open Source
- Directives and policies are relaxed
- Training available for all levels
- Business driven Open Source

Wanted Organization
- Authority on Open Source
- *Self-managed organization
- Directed by business aspects of Open Source
- Faster growth than the competitive edge becomes commodity
- Indirect and asymmetric business models

Current Inabilities and Growing Pains
- Value extracted just from a few communities

Current Process
- Typical characteristics of a fairly mature org
- Governance starts to be automated
- Contribution Strategy formulated

Transformation

Wanted Process
- Industry-wide collaborations
- *Create and govern ecosystems
- Crowd-based Requirements

Wanted Abilities
- High flexibility in capture multiple revenue streams

Current Product
- Net connected, but not very servitized
- Modularized, but still device centric

Wanted Product
- Open Source driven product innovation
- *Service-based business
- Value extracted from own ecosystem

Business driven
- 5. Prevail — Leadership through new initiatives
- 4. Collaborate — Co-creating business value
- 3. Directed — Active and contributing

Value for the company / Effort for the company

- Based on Sony Mobile's industry observations and business exploration.
- 5 unique OSS Patterns identified + 3 common.
- Close to the "Servitization" Scenario
- **Key achievement: Additional/alternative revenues extracted from orchestrating your own ecosystem.**

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Patterns in Business-driven Open Source

- The end goal is to extract value to your from your **orchestrated ecosystem** to your business

- Common that the seed of an eco-system is a **Developer Program**
  - Created to catch and nurture the **participatory culture** of Open Source, it's initially intended to open up the company for an environment of independent developers to inspire and influence.

- The Developer program is extended to become your own Open Source community
  - The influence goes both ways, pawing the way for a **Crowd-based requirement management** and fueling an **Open Source-driven product innovation.**

- The offer becomes a **open software platform,** allowing other business partners to explore
  - The platform becomes as well the carrier of new offerings that you provide with **Extended** (e.g. services), **Indirect** (e.g. through a HW premium) or **Asymmetrical** (unrelated) business models**.**

- An **ecosystem is established** that might disrupt the market logic in such a profound way that it in practice forces all other market actors but the strongest to participate.

- The Open Source eco-system is now not only a support for the business – **it is the business**!

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Industrial Open Source
– an Open Source governance program for Industrials

- The SCALARE book "Scaling a Software Business" was launched by Springer the summer of 2017 and is available as a [free eBook](#) at Vinnova.

- Contains two chapters on the Open Source Scenarios.

- The handbook on an Open Source Program for Industrials, "Principles for Industrial Open Source", was recently released as a [free eBooklet](#)!

- Contains detailed descriptions on all 27 identified Open Source patterns.
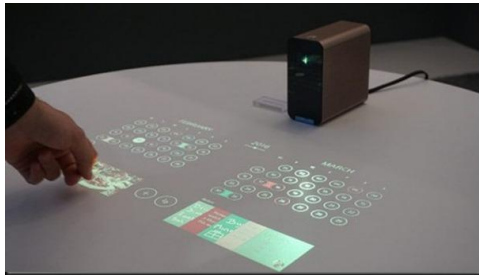
The future for Sony Mobile

- Even the most hardware oriented product offerings are facing to be "servitized" by a combination of **AI/ML**, **Big Data**, **Cloud** and **IoT**.

- Those technologies are already entirely **entrenched by Open Source**.

- We are charging ahead on "Beyond Smartphone".

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Key Take Away

1   Open Source is more than Code & Licenses ▶ It is a matter of maturity!

2   It is not hacker heaven anymore ▶ There are business patterns for introducing Open Source in a structured way!

3   Industrial Open Source demonstrates a way of how to do it!

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Thank You!

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