



MAGAZINE

SCALING THE HEIGHTS WITH YOUR TEAMS

In this issue:

IoT as a motor of change ↻Page 10

The SMF Canvas – your best scaling tool

↻Page 4

Scaling in the automotive industry

↻Page 16

24
PAGES
ON SCALABILITY

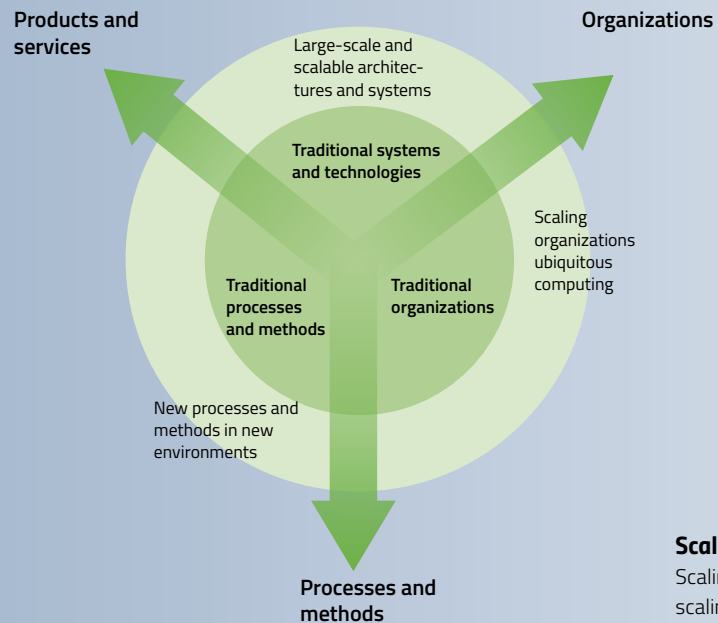


Shortcut to the Scalare project

1

The aim of the cross-cooperation research project Scalare is to assist European industries to scale their software capability as software becomes the main focus for innovation and competitive differentiation. Scalare will explore and describe software scaling through different dimensions: Products, Systems and Services; Organizations and Business Domains, and Processes and Methods.

Scaling Management Framework



2

The expected outcome from Scalare is a Scaling Management Framework (SMF) that provides guidance for different approaches for scaling such as Open Source, Lean & Agile, global software development, Architecture and Product Lines. The framework may serve as a tool to design a roadmap for any organization which faces a transformation of this kind.

Scaling mountains:

Scaling software and scaling mountains have much in common: both activities need skilled teams, discipline and devotion to a common goal.



Scalare:

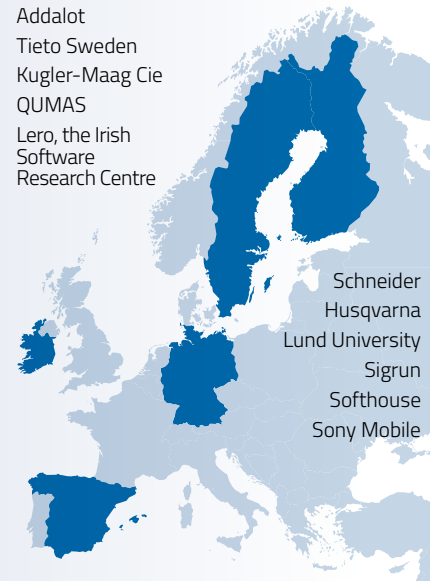
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3

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A greeting from the project room

The Scalare project represents a joint effort of industry and academia from five countries to tackle one of the key challenges of European Industry: how do we scale our organizations when software is becoming a critical part of our offer and assets?

These transformations are often driven by the technological evolution of products, systems or services. But they may also be driven by how the business and the company are organized. In many instances, the software scaling transformation requires a reshaping of existing processes as well as the incorporation of new best practices and tools. The Scalare approach is unique, in the sense that it provides a holistic vision for scaling in three dimensions. As such, it covers the dimensions of business, organization, product and process in the same model.

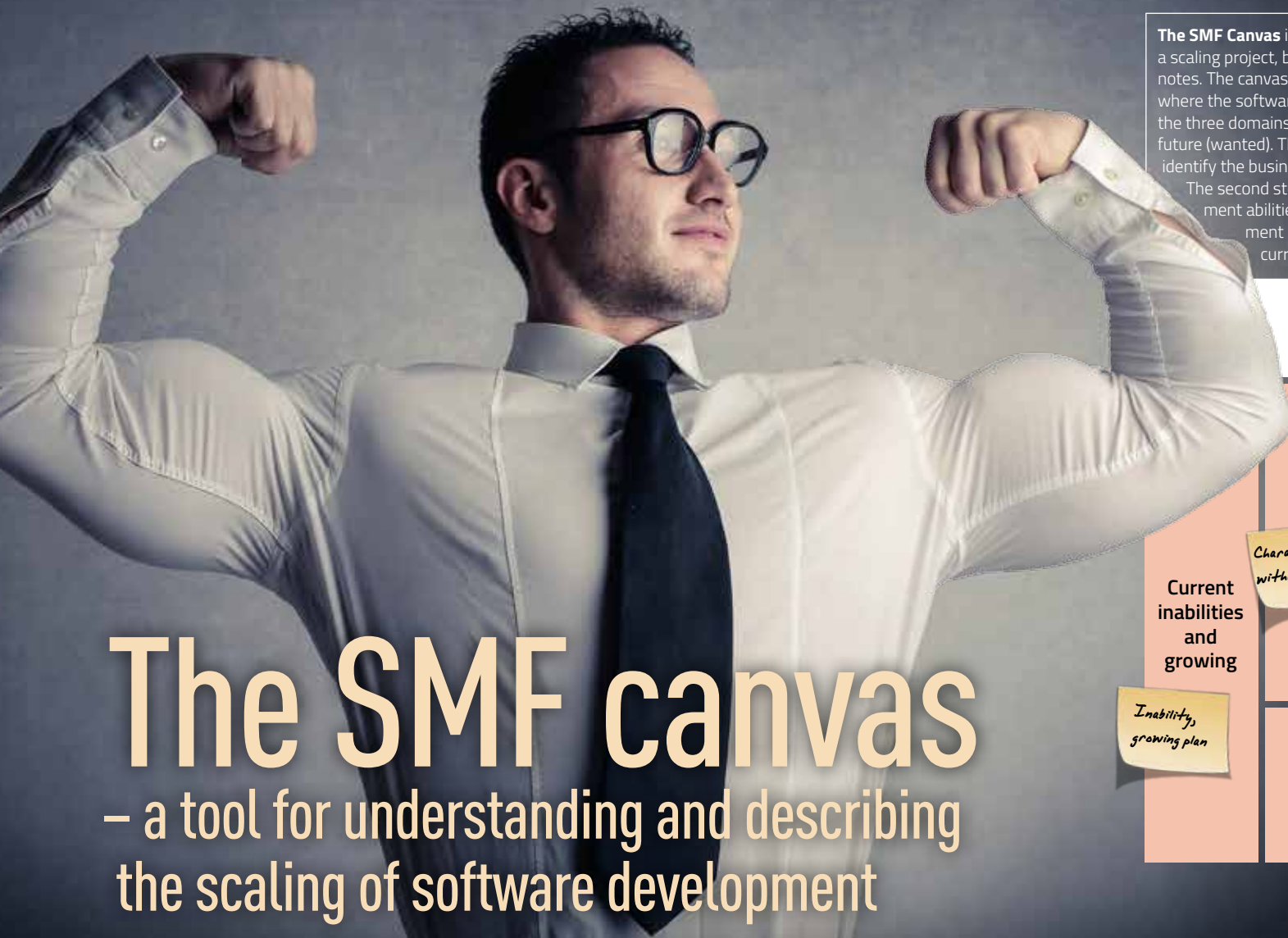
To gather interesting case studies in a structured way within our organizations, we designed a Scalare canvas tool. This is based on our model, the Scaling Management Framework (SMF; see page 4). The compiled collection of case studies thus collected will represent a knowledge base that may be of great use to decision makers in the European industry when they are faced with the need for scaling within their organizations and their business drivers.

With the help of version 1.0 of the SMF model and its corresponding canvas, we have documented a set of case studies and scenarios. So far, our focus has been scaling approaches such as servitization, open source, offshore, scaling agile, continuous delivery or architecture. Now patterns are identified and we connect our patterns and case studies to different business drivers to provide a useful guideline for future users of the Scalare results.

This magazine serves to give some insight into the project and can also be seen as a teaser for the book which will be published in 2016. Enjoy your reading!

*Miguel Ángel Oltra Rodríguez,
Global Solutions – Strategy &
Innovation at Schneider Electric
Project Manager of Scalare*





The SMF canvas

– a tool for understanding and describing the scaling of software development

One of the core missions of the Scalare project is to create a tool which may help organizations scale up their software development. The result is the SMF Canvas, based on the Scaling Management Framework model.

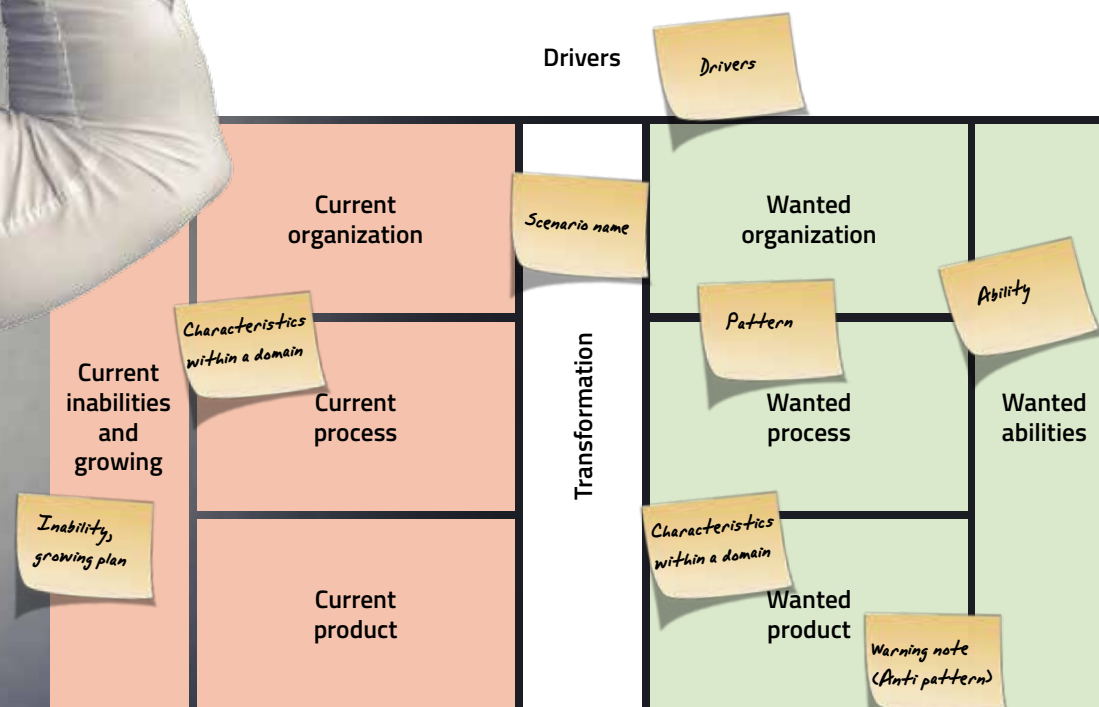
Scaling software development is a complex undertaking which can be organized in a number of ways. For example, staffing up the organization will most certainly not work without additional changes to the processes, development tools and the architecture of the product.

“How all this fits together is not always very clear,” says Ulf Asklund, assistant professor at the Faculty of Engineering at Lund University. “But it is apparent that a change that is well analyzed, moti-

The SMF Canvas is a tool to organize the analysis of a scaling project, based on a whiteboard and post-it notes. The canvas is a representation of the SMF Model where the software model has been divided into both the three domains and also time: present (current) and future (wanted). The first step is for top management to identify the business drivers, i.e. the reason for scale.

The second step is to identify the software development abilities by observing the software development as a “black box”. This includes the current “problems” of today (inability/

growing pain) and the abilities needed to meet the business needs in the future. The third step is to find the root causes to the current disabilities. This is done within all three domains and it is important that all disabilities are explained by at least one root cause. The last step is to identify the wanted domain characteristics that enable the wanted abilities – in all three domains. The gaps between the current and the wanted domain characteristics are the transformations the company needs to carry out.



ated, and described is much easier to implement.”

A central scaling dilemma is that there is often a lack of competence in precisely those areas where the organisation needs to grow. Without an objective model to evaluate the needs and capabilities, it is easy to end up with a solution which is based more on old capabilities than on future needs. Other impediments for a successful scaling process are time pressure, internal politics and dependency on key personnel.

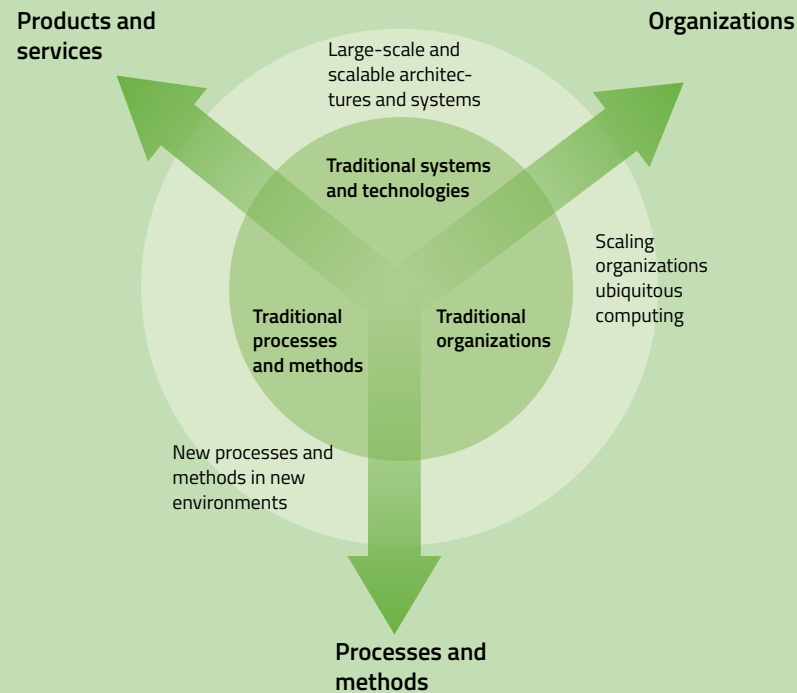
Accordingly, there is a need for a model which can help management make an objective analysis together with the organization and take the right decisions.

This model should also describe different alternative solutions from experiences gained in case-studies and previous usage of the model. Finally, it should provide a basis for change communication so that managers can explain and motivate the changes.

Scaling Management Framework:

Scaling Management Framework covers three domains: Organizations; Products & Services; and Processes and Methods. It also captures the relationships between these domains. To exemplify the scope of the SMF, let's consider a software test tool company that is working in the automotive industry. They have been very successful in their local market, but now have the

opportunity to expand into Asia. The model may help them in the analysis of their software development and support organization. It is not a tool for analyzing business models, but it can be used to analyze scaling changes triggered by e.g. the introduction of new products, specific customer requirements, a new support organization, etc.



“When we created the Scaling Management Framework model in the Scalare project, our purpose was to address the questions and challenges organizations face when they need to scale up their software development,” says Ulf Asklund. “To handle it, we also created the SMF canvas to support the analysis of the current situation and the development of the scale to a wanted position. These tools may be used by totally different organizations – either traditional software companies or hardware companies that intend to make their products smart and connected.” ■

Ulf Asklund is an assistant professor at the Faculty of Engineering at Lund University. His research area is software development with focus on distributed development and configuration management. He has also worked for Sony Mobile as Enterprise Configuration Manager, being responsible for the CM Standard and system owner for PLM.



The Scaling Agile Model

Get your big organization UP TO SPEED

The Scaling Agile Model, developed within the Scalare project by the Swedish consultancy Softhouse, is for companies that want to start working with agile on a larger scale. The model describes scaling in three dimensions: size, offerings and value stream.



“The typical starting point for companies that hire us for scaling processes is that the development department has been using Lean & Agile successfully for a few years. Now they want to be involved in spreading the methods and philosophy through the rest of the company,” says Ola Morin, a senior consultant at the Swedish consultancy firm Softhouse and spe-

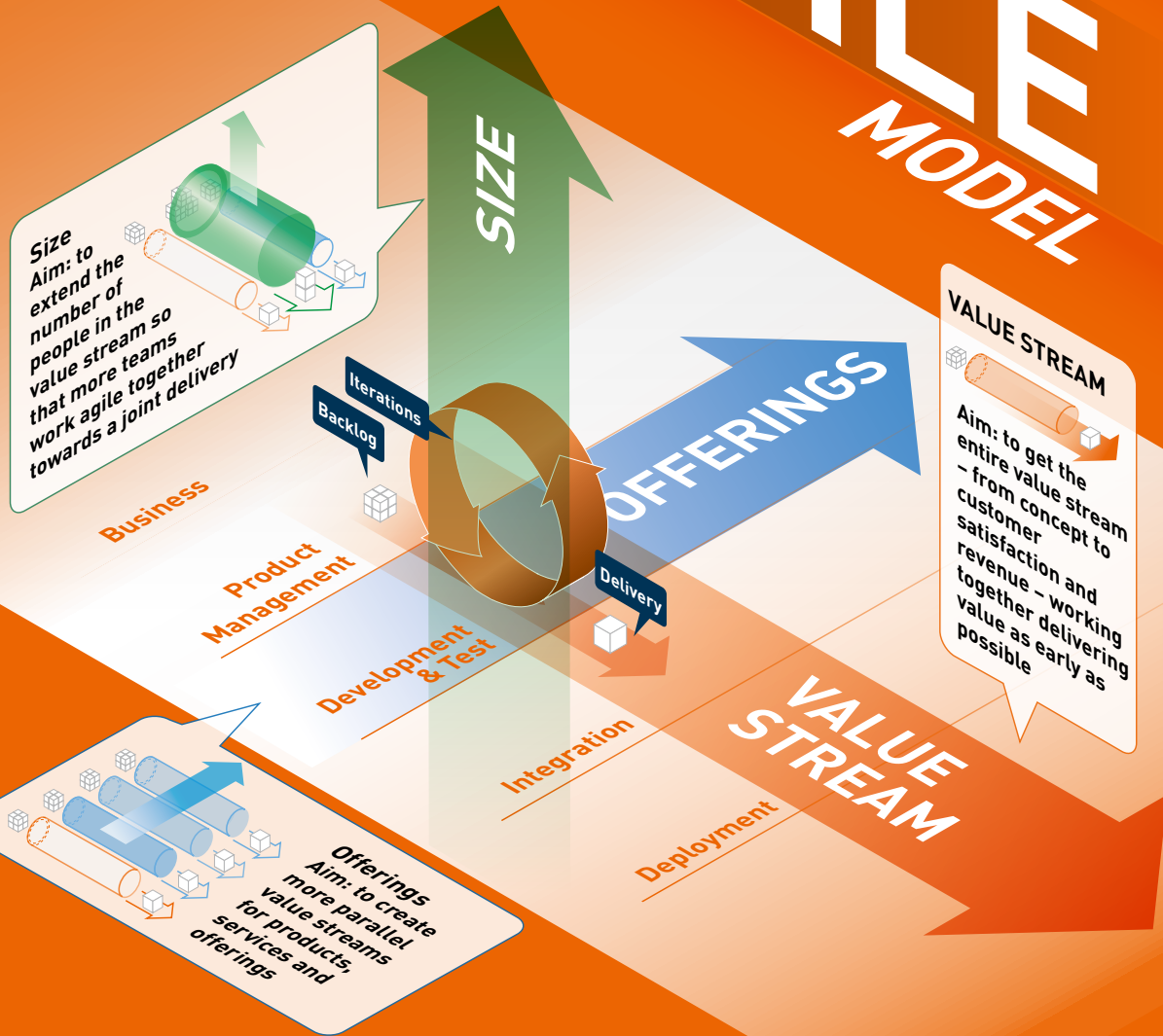
cializing in agile transitions. “Our client companies have become skilled at methods such as Scrum or Kanban, but only on a limited scale. Now it’s time to take the next step and start thinking bigger – but this upscaling can of course look very different!”

For such processes, Ola Morin and his colleagues from Softhouse have developed an Scaling Agile

Scaling Agile is a concept that helps you to spread the agile philosophy throughout the organization.

The typical starting point for Scaling Agile is that you have tried Scrum or Kanban – but only for a limited number of products or teams. Now it's time to take the next step and start working agile on a larger scale.

According to our Agile Scaling Model, this scaling can take place in three dimensions.



Model. The starting point is the Agile Manifesto, which states that “Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.”

“For those of us who are already convinced of the benefits of agile methods, there is nothing odd about this,” says Ola Morin. “But there is an explosive force in all of this that should not be underestimated – the agile change process is often more profound than you think because it challenges ingrained mindsets and structures. It often becomes necessary to review management, control and decision-making structures, which products and offerings you have, as well as changing roles and modifying the organization. To succeed in an Agile Scaling requires the same holistic approach that permeates Scalare and it was therefore natural to combine our experiences with the mindset and models that are presented in Scalare for our Scaling Agile Model.”

The principle “one size fits all” is doomed to fail in agile scaling work. Instead the starting point for Ola Morin and his colleagues is a Scaling Agile Assessment, based on workshops and exercises together with the customer. Among other things, they use the Scaling Agile Model to get a clear picture of the dimensions of the upscaling – size, offerings and/or value stream (see figure). Together they also clarify which business drivers the company prioritizes – value creation, efficiency, innovation or something else.

“From this, we propose a road map and a change backlog. It might include frameworks for scaling agile such as SAFe or DaD,” says Ola Morin. “But in many cases, we propose simpler approaches.”

Four factors that help companies succeed with a Scaling Agile process

Truly cross-functional value streams

The value streams should contain all the necessary competence to deliver value, e.g. developers, testers, architects, but not to forget, business representatives.

Courageous leadership that supports but does not micromanage

Management must understand agile values and do what is necessary to implement the planned change.

Iterative approach with a clear pulse

Technology and infrastructure should enable fast feedback and fast, frequent release cycles.

Visualization to promote discussions

Stop hiding road maps, plans and ongoing work in tools that not everybody can access! The key to making the right decisions and priorities is that everyone has the same vantage point and that the discussions are open.

The Scalare project has been a source of knowledge, feedback and vital contacts for Ola Morin and his colleagues.

“We have received valuable input into our model from our European colleagues in the project. Quite simply, you become a little smarter when you can share in different outlooks and experiences,” says Ola Morin. ■

Softhouse Consulting

Softhouse Consulting AB is a Swedish consultancy company, founded in 1996, offering software and organization development with a focus on agile methods. The company has 200 employees in six offices – five in Sweden and one in Bosnia.

Ola Morin is a senior consultant at the Swedish consultancy firm, specializing in agile transformation and major scaling processes.





The Internet of Things project Husqvarna Fleet Services started as a “skunkworks”, carried out by interested enthusiasts within Husqvarna Group. Today it inspires the whole group when the market demands “smart” devices that can exchange data with network-based systems. This is the story of how a pure hardware company became a Swedish pioneer in the IoT arena.

Husqvarna is a brand that has largely been associated with reliable hardware products not especially associated with the information society that has grown up around us. Admittedly it produced the world’s first solar-powered robotic lawnmower in 1995, but until recently it created no products that collected and processed data for transfer to other systems. It was simply a traditional product company, rather than a service.

But in 2007 an initiative was undertaken that would change everything. The After Sales department initiated a work aimed to provide an up-time-guarantee to professional landscapers hence differentiate the offer compared to competitors. This ended up in a program called “Husqvarna Performance Program”, a project in which engineers equipped their ride-on machines with sensors that collected operating data and uploaded it to a web portal. The initiative then broadened and deepened when also the hand-held machines were included. This gave birth to the concept of Fleet Services.

Sensors collect operating data

Fleet Services today includes gasoline-powered machines equipped with sensors and a back end system in the cloud (see information box). The prod-

ucts are aimed at the Landscaper customer segment; typical examples are the park authorities that keep cities beautiful the world over and have teams constantly out in the field. The collection of operating data provides a wealth of useful information for the landscaping organization.

‘Adding connectivity can provide added value for all landscaping professionals. Operators can receive guidance on how to perform tasks and at the same time stay on top of their health and safety. It will alert technicians about maintenance needs before need of service, information that can be shared with a dealer to enable fast and accurate support. It will allow landscaping management to plan and drive their business in a whole new way,’ says Håkan Wahlgren.

The Fleet Services concept continues to develop in close cooperation with selected customers. In total, there are today approximately 60 employees in 15 different companies who use the equipment.

‘We have completed 20–25 field tests with modern companies at various locations in Europe and even Australia,’ says Håkan Wahlgren, adding that they are trying to engage the reference operators in the development process as much as possible and make them feel that they are involved in creating something of benefit to themselves.

How the IoT concept inspired Husqvarna

Timeline for Husqvarna’s “smart” products

1995 Husqvarna’s first microprocessor-controlled product: Husqvarna Robotic Solar Mower – the world’s first solar-powered robotic lawnmower.

2006 Launch of Auto-Tune, which always provides optimum tuning of chainsaw motors. Can also provide diagnostic information to a personal computer.

2007 Husqvarna Performance Program (see text).
2014 Beta launch of Fleet Services in seven countries.

2015 Launch of Fleet Services.



From product to service offering

What started as free experimentation in the development department is now reshaping the entire Husqvarna Group identity – a transformation from a classic, product-oriented manufacturing business to a company in which services lead the way toward the future. Husqvarna has participated in a number of research projects and challenge groups organised by Marknadstekniskt Centrum, The Institute of Technology at Linköping University and Vinnova.

‘It has been very valuable to cooperate and network with other Swedish industry companies (Volvo Bus, AGA, SKF, Alfa Laval, Ericsson, Sandvik, etc) in this network and it has given us a feeling that we are on the right track with what we are doing within industrial services,’ says Håkan Wahlgren.

Test lab and IT dpt important

Two departments within the Husqvarna Group have been of special importance for Fleet Services. One is Husqvarna’s global test lab that has extensive experience in gathering and analyzing operating data. Over a long period they have mapped out what happens when a trained and experienced operator uses the machines – and this can be used as the “gold standard” in comparisons of “machine handling” and “vibration reports”. The other one is Husqvarna Group’s IT department, with their skills at digitizing the expertise that already exists within the company.

‘The digital world is a new dimension of our reality – everything we do can be reflected in a digital counterpart,’ says Patrik Karlsson, Enterprise Architect in the IT department. ‘When the product is connected online and we get new interfaces, something happens: the user experience becomes software-based and so much more malleable.’

Transects all the Group’s brands

Petra Sundström is Senior Project Manager at Husqvarna Group’s Connectivity Hub, responsible for the company’s investment in internet-connected equipment.

‘Fleet Services is a wonderful initiative,’ says Petra Sundström and explains how the project paved the way for the strategies now being devised with joint technology platforms for all of the Husqvarna Group’s brands.

‘The hub that we have now set up is a multi-disciplinary project that “transects” all the Group’s brands,’ says Petra Sundström.

Her colleague Anders Mattsson, Manager of Information Products at Husqvarna Group and responsible for the software development process, says, ‘With Husqvarna Fleet Services, we have become a model company for what the Scalare project is all about: we’re moving from being a purely industrial company to a company in which software is becoming increasingly important.’ ■

Five experiences from the Fleet Services project

- 1 Get to know the customer and find out what problems the technology is required to solve.**
Otherwise it is easy to create a pure desktop product with features that have no value to the customer.
- 2 Create working prototypes as soon as possible and involve selected customers.**
The concept must be concretized in order to motivate the organization and must be testable in authentic work situations by experienced customers with high demands.
- 3 Realize that concept development is quite different from commercialization.**
Leaving the initial phase where the goal is functional prototypes and starting to work towards a genuine product creates very different kinds of challenges. It’s about navigating in unknown waters.
- 4 Digitize knowledge.**
Collect data, and turn it into information from which you can draw conclusions that can be acted upon.
- 5 Do not underestimate the difficulties of mass production.**
Developing industrial services requires a whole range of interfaces. It is easy to overlook the complexity that this creates.



How Sony Mobile became a part of the Open Source community

From internal code development behind locked doors through to open collaboration within the Open Source community – this is Sony Mobile’s transformation as a software developer. Here Carl-Eric Mols, Head of Open Source, reflects on the experiences of recent years.

The Open Source movement (see fact box) is several decades old, but it wasn’t until after the turn of the millennium that the major players entered the game, keen to share in all the available open code bases. Today hardly any of them look back with regret to the old closed world, where huge internal development departments focused more often on maintaining code than developing it.

Sony Mobile’s Open Source journey began with general curiosity among developers at Sony Ericsson’s development department. This led eventually to an investigation whose results were so convincing that the management took the bold decision to burn their boats, shut down the work on operating systems without a future and invest wholeheartedly in the Open Source based Android. The new era

began in 2010 with the Android telephone Xperia X10. The success of this strategy was confirmed in 2013 when Sony Mobile was declared the core business within the Sony Group.

Carl-Eric Mols, Head of Open Source and representing the R & D arm of Sony Mobile, sees a whole host of advantages in belonging to the Open Source movement:

‘First of all, it increases the pace of innovation and development, simply by having a larger number of developers focusing their creativity on a single task. And when someone comes up with a clever solution, the entire network has a share in it and benefits from it. As a result, everyone is constantly creating new opportunities for everyone else,’ he says.

Carl-Eric Mols

Telecom software strategist who joined Sony Mobile in 2004. He is since the last eight years the “Open Source Czar” for the company’s Open Source governance.



“Basically, Sony Mobile would probably have fallen by the wayside in today’s mobile market. Without Android we simply would not have existed. You have to realise that more than 85 % of our software today is based on Open Source.”

Carl-Eric Mols believes that an Open Source project must be characterized by three properties:

“The key words are transparent, participative and collaborative. To achieve this requires support and understanding from the company. Actually, more than that: management must be prepared to make Open Source thinking a part of the corporate culture, where the concept “freedom with responsibility” is applied to the developers’ role.”

R & D and Legal departments – A dynamic duo

Close collaboration with the Legal department has played a central role. A key aspect was the early establishment of a “double-command”, consisting of Carl-Eric Mols and a lawyer from Sony Mobile’s Legal department. The ‘Dynamic Duo’, as they called themselves, have been instrumental in changing the business and mindset throughout the development organization.

“The Legal department recognized in the initial stage that Open Source – from a legal standpoint – was perfectly solid and valid; acquiring Open Source was essentially the same as any other kind of third party software,” says Carl-Eric Mols. “They also noted that Open Source would become utterly essential for the company’s survival from a business perspective.”

In this way, the Legal department became a key player in persuading executive management that the necessary culture shift not only was possible, but would be warranted by governance under Legal’s supervision.

“That support is fundamental for my role as the chief strategist for Open Source. It has also led to mutual trust between software developers and the lawyers. I have always taken pride in ‘translating’ legal concerns to developers, as well as the other way around, educating Legal on engineering concerns. The resulting trust has also led to executive management being much more daring in taking business initiatives involving openness and collaboration – even when it involves the competition.”

The largest Android contributor

A major challenge is to fight the notions that Open

Key aspects in changing culture – some advice from Carl-Eric Mols

Create an Open Source Maturity model

Understand the level of maturity to drive change, provide a vision and outline a strategy to drive change. Use this extensively as a communication and education tool.

Describe the processes

This should include how we work, our roles and our responsibilities. The most important processes are intake, compliance and contribution.

Create a tool chain

Important tools are (1) an audit tool to ensure compliance and (2) a tool to extract copyleft code. The general aim should be to reduce engineers’ workload.

Educate, educate, educate!

In addition to formalized courses, education should be a part of every interaction. Lead by example, following the three key concepts “transparent, participative, collaborative”.

Source is mainly a software engineering concern and also something of slight headache for the Legal department.

“Actually, it is a massive disruptor of business logic! These earlier viewpoints dominated thinking in the early days of Open Source in Sony Mobile, where it was seen OK to use because it was “free of charge”. But in the last couple of years our mindset changed completely as the success of Android unfolded.”

During his management training sessions a year or two ago, Carl-Eric Mols often used to start with the question, ‘How could Google, with the Android team consisting of just over 100 people at that time, create, develop and launch a full-blown smart-phone operating system?’ And he always jumped in immediately with the answer, ‘Well, they didn’t!’

“Google’s Android consists of about 60-70 large Open Source components that were adapted and integrated by the Android team. So in fact the Android team’s work rested on the shoulders of thousands and thousands of Open Source developers – and there is no way we at Sony Mobile could ever match that massive amount of development power. Today we, in our turn, are standing on the shoul-

ders of Android and searching for the sort of business opportunities that we can leverage with Open Source.”

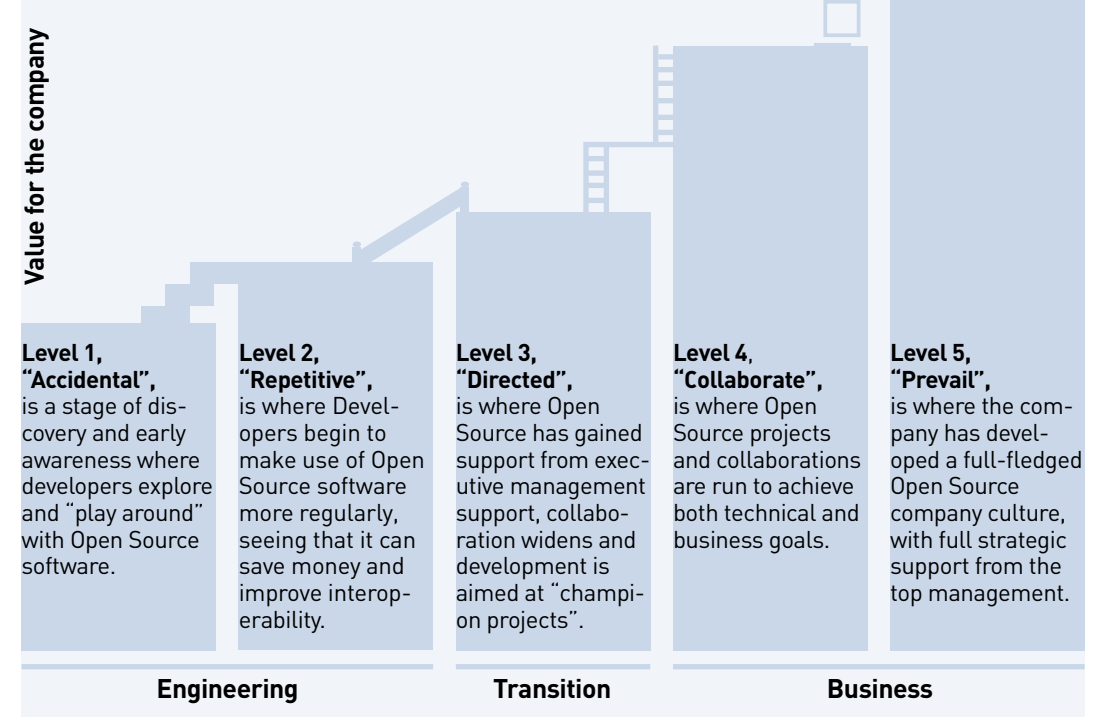
Today, not only does most of Sony Mobile use Open Source for everyday development, but the company has also established itself as the largest external contributor to Android development.

“Recently, we have also taken several initiatives in

the marketplace in leveraging Open Source in tilting business to our advantage. We are making progress in achieving position on the higher levels of Open Source Maturity when business concerns come into play. Here the effort in Scalare is designed to help us to better navigate uncharted waters, such as ‘ecosystem building’ and ‘first market mover’ advantages given by Open Source based business.” ■

Sony Mobile Open Source Maturity and Strategy model

The Sony Mobile Open Source Maturity and Strategy model has five steps. The first two represent an engineering phase, whereas the last two steps are business driven. Step 3 represents the transition from engineering to business.



“The resulting agile team discipline is not of the command and control style, like marching in lockstep. It is the discipline of the dancers of a ballet troupe.

Scaling agile in regulated markets: Busting the non-discipline myth

“Agile software development lacks discipline” is a persistent myth in the automotive industry that needs debunking, writes Hans-Jürgen Kugler, Chief Scientist at Kugler Maag Cie.

In the last 18 years the software contents of cars has skyrocketed to one hundred and more millions of lines of code. The large hadron collider has about 50 million lines of code. Innovation around the software car is determined by software competence. The next generation, the connected car, “merges” with the Internet. Automotive companies have to become software companies with faster release cycles.

The automotive industry is a tightly regulated industry. There are public regulators and there are the OEMs, the original equipment manufacturers, who carry the product liability.

Regulated markets are compliance oriented. Prod-

ucts, services and processes need to adhere to industry specific standards reflecting industry good practice. This compliance travels down the value creation chain. Before companies can scale agile development to their mainstay approach, the regulators need to be scaled to permit a change of behavior and re-interpret their regulations.

“Agile software development approaches may help productivity-wise, if it wasn’t for the lack of discipline,” you hear from decision makers in the automotive industry, especially from the OEMs. This “no discipline” myth needs busting. It is a common barrier to successful deployment of agile teams. It must be broken at the regulators, first.

The automotive compliance system is based on a discipline that forms the basis of a hierarchical command and control culture that is in the DNA of most automotive organisations. Many believe that any productivity gain has to come from skipping development practices, such as testing or documen-



tation. The latter is strengthened by some of the statements made by agile proponents. The second myth is the “code only” myth. This myth can be busted by looking at the definition of delivering customer value. But let us return to the notion of discipline.

Externally enforced discipline – through their own and regulators’ quality assurance – is part of the automotive culture. This is a success story until now. The growth of complexity in connected automatic driving requires more effective development.

If the effectiveness of agile development depends on “skipping” development practices, then any increase in velocity would be linear. Data from high performing agile teams show multiples. And they deal with changes in the customer’s requirements much better. Proper agile teams are self-organizing, eliminating decision cycles. Self-organization relies on discipline – the self-discipline of the individual: self-discipline to become and stay a valued team member. The resulting agile team discipline is not

of the command and control style, like marching in lockstep. It is the discipline of the dancers of a ballet troupe. Discipline in training and execution produces an agility that makes one forget gravity.

Regulated markets expect compliance. Discipline is essential. One has to win the hearts and minds of the regulators by showing that a new, more powerful, discipline is at work. Some automotive OEMs and suppliers have understood this. ■



Hans-Jürgen Kugler is a Chief Scientist at Kugler Maag Cie, a German consultant company. For more information, read the report “Software Drives. Automotive E/E Development 2030”. www.software-drives.com

The art of

offshoring



Offshoring has become an important aspect of scaling in the software industry. Ulrika Bergman of the Finnish-Swedish IT services company Tieto describes some of the challenges.

Originally, offshoring was driven by the need to achieve a lower cost of operation. But over the years, the focus has gradually shifted to factors such as access to qualified personnel, ability to ramp resources and gaining access to an international market.

In today's globalized world, software development offshoring is a well-established and growing practice. Still, many offshoring projects do not give the expected results in terms of quality and time-to-market due to e.g. communication issues, personnel retention and legal matters. In addition, it is also an area that puts high demands on cooperation between different departments and different roles within a company and other stakeholders involved in the projects. Cultural differences, communication over great distances, and communicating the demands and expectations are examples of areas that make it difficult.

Tieto case study

In this specific Scalare case study, efficient communication in a global delivery model was investigated by Tieto – the largest Nordic IT services company, with 13,000 employees operating in more than 20 countries. The main business driver was to reduce costs and keep the service level unchanged. The system under investigation had been in operation for over 20 years and significant new development was seldom undertaken. Therefore, the customer was demanding increased cost efficiency and reduced maintenance fees.

“We observed that in a dual site delivery set-up, offshore engineers are heavily dependent on onshore competence,” says Ulrika Bergman, Global Account

Manager at Tieto. “The onshore engineers often work closer to the system owner and end-user. In this case the onshore engineers also had very long experience and knowledge from working with the system compared to the offshore engineers.”

The study team also noted that people from the offshore team in India found it important to meet key people in the Swedish delivery team. After such meetings communication efficiency appeared to be much higher. Letting staff from Sweden visit India may sound rational, as it makes it possible to meet and train many people at the same time. On the other hand, when staff from India visit Sweden, it is possible both to get training and also to get to know all the team members in Sweden better. Moreover, a business trip to Sweden was seen as a very attractive goal in itself.

“In the previous single site situation ad-hoc peer-to-peer communication was very efficient,” says Ulrika Bergman. “When distributed, communication cannot rely on the assumption that it is always possible to immediately get in contact with all team members. Thus a more structured communication must be established and several different communication channels should be utilized in order to get efficient communication for all situations – phone, email, desktop sharing, video, chat, etc.”

In this case the complexity of the functional requirements was found to be of great importance. Solution functionality took longer to learn and understand than the technical solution. The implementation techniques are often quite generic. However, the customer requirements and the customer processes supported by the system are much more specific. ■

How to succeed in establishing a well functioning communication culture when offshoring

Make a thorough analysis of the system before selecting competence and communication strategies. It is more challenging to get an effective offshore for complex systems, so focus on functional complexity rather than technical solutions. E.g. a system including a lot of country specific logic such as legal rules, local language, etc. is very hard to understand by people not from this country.

Decide upon a competence strategy early in the outsourcing phase. Take it into account when staff reduction starts at the local site in order to secure personnel for future roles available in later phases of outsourcing. In this way a stable level of competence for all roles can be achieved.

Divide up the system and create more focused roles working in the different areas. Analyze which parts of the system knowledge should/could be transferred to India and which parts would actually be better staying in Sweden from the personnel rotation perspective.

Make a visible step-by-step knowledge transfer process. Profile training programs to areas of expertise, and let team members mature over time area-by-area (repeat steps per area):

- 1) Self-study using existing training material (docs and videos)
- 2) Supervised trial operative work
- 3) On-site training with architects
- 4) Unsupervised operative work

Continue to improve training programs and knowledge transfer and utilize the positive aspects for people in India to visit Sweden.

Do not underestimate the difficulty in achieving good awareness in the project, i.e. in letting all team members know what is going on. Make sure that you do the following:

- Make an analysis of what recurring meetings are needed and decide on frequency, participants, purpose and scope.
- Decide on communication channels to be used and establish good conduct for the different channels. Use the most efficient channel for each meeting.
- Reduce the amount of redundant communication (e.g. when team leader approves questions to architects). Rules and processes for how to communicate can solve this problem. Be careful, however, as it also creates latency in communication and reduced awareness between sites. Documentation solutions like the wiki will also help reduce redundant questions.
- Create processes to continuously secure the quality of the documentation. An obvious risk is otherwise that the size of information stored grows quickly. Old information must be removed and relevant information made searchable and readable.

The challenges of the "on site" company

One main challenge is the fear and anxiety about how local jobs are affected. An offshore cooperation can lead to internal belief that the activities will be completely transferred to another country, and that jobs are threatened. This often leads to an inner resistance to offshore initiatives, especially in the early years. Another challenge is the need to change roles, routines and processes for the "on-site" staff. Often this includes the need to develop new skills and competences "on-site" to support an efficient global delivery set-up.

The challenges of the "offshore" company

At the offshore site the recruitment of highly skilled engineers can be a challenge. Although there are many skilled engineers in for example India, it is difficult to get hold of the best because of competition from other global engineering companies in the high-tech areas where a lot of offshore cooperation is established. Companies therefore often experience difficulties in attracting the best employees. One of the challenges is also to keep personnel in the offshore sites. Employee turnover in those areas is often higher than in the local country.

SHIP AHOY!

GET THE FLOW IN SHIPPING YOUR PRODUCTS WITH CONTINUOUS DELIVERY

Continuous Delivery represents a refinement of Lean & Agile methodology which is very useful when meeting scaling challenges. Here Johan Kardell, senior consultant at Softhouse, explains the basics and gives some advice.

Recently, there has been quite a buzz about Continuous Delivery – "the next big thing of Lean and Agile". Jez Humble and David Farley published a groundbreaking book in 2010 and the method is now gaining momentum in the software industry. Basically, it is a method that enables software organizations to deliver new software releases or updates quickly and continuously without suffering internal delays or quality problems. It has been proven to increase

both the speed and quality of large industry projects.

For which organizations is CD appropriate?
CD is suitable for all organizations involved in modern software development, especially when working with agile methods. It is particularly suitable for organizations that deliver services, because services are easier than products to update without users noticing.

What is the hardest thing to master in CD?
The level of automation which is needed for there to be a real improvement in the supply flow. It requires a lot of work to automate the tests which are essential to ensure at all times that the software meets



A STRONG EUROPEAN TEAMWORK

Scalare is about scaling, and scaling is about change. And on a meta level, being a part of this skilled and experienced team also triggers change; it is a professional experience which helps those of us who participate to improve and develop. For example, we at the Swedish company Softhouse – whose role in the project has been as experts on Lean & Agile – have gained many new insights into our collaboration. The project's case-study-driven approach is extremely valuable for a con-

sultancy firm such as ours. New lessons, experiences and contacts help us to increase the speed and ambition of our conceptual and business development around ideas such as Scaling Agile and Continuous Delivery where we aim to be Scandinavian leaders.

Perhaps the greatest strength of the Scalare project is collaboration between academia and industry. The University of Limerick and the Faculty of Engineering, Lund University have helped to open the door to the research world with all that this entails in terms of theoretical understanding and access to new findings. With our Scalare partners we have jointly developed new concepts that we have been able to test, evaluate and refine in case studies. We and our colleagues can translate all these experiences into improvements in organizations and processes as well as new services and offers from Softhouse.

We have now completed two thirds of the Scalare project and I am proud to see what the team has produced so far. During the year to come, we will follow up our canvas model and our case studies with a book. Scalare shows that although the success of the software industry is built upon competition, there is also room for networking and cooperation. The project is a living proof that professional altruism can make companies stronger, more sustainable and more prepared for an uncertain future.

Anders Sixtensson, Softhouse

The Scalare project has taken its name from one of the most popular aquarium fish, *Pterophyllum scalare*, also referred to as angelfish. It is native to the Amazon River and its tributaries.

