

IN5140

Smart processes and agile methods in Software Engineering

Group session 9

Agenda

First hour:

- Some information
- Brief repetition of lecture
- Quiz

Second hour:

- Discussion
- Previous Exam Questions

Information

- **Previous Exams** will be published each week.
- **Fill the time** in Oral presentation time slot

14th, 18th and 20th November: Project Oral Presentations, Fill your Group number with your preferred time slots in **Oral Presentation time slots** , More details will follow soon.

Censorship Guide

Group session
slides

**Previous year
Exam questions**

Project and
deliverables

Weekly tasks

<https://www.uio.no/studier/emner/matnat/ifi/IN5140/h24/projects-and-deliverables/>

Questions?

Speak out loud, or type in chat

Repetition from lecture

Summary (Scaling Agile)

- **Agile principles, practices, and methods**
 - XP : increment than simplify
 - Scrum : freeze requirements during short iterations
 - Lean : reduce waste
 - Kanban : limit WiP
- **CI/CD**
- **Agile leadership**
- **Development Plans**
 - Traditional (predict and plan)
 - Agile (plan and respond)
 - Ad-hoc (just do something)
- **Full SAFe framework**

Quiz

Mindset behind development methods and frameworks

- In traditional development, you get what you .
- In agile development, you get what you .
- In SAFe, you get what you .

test

specify

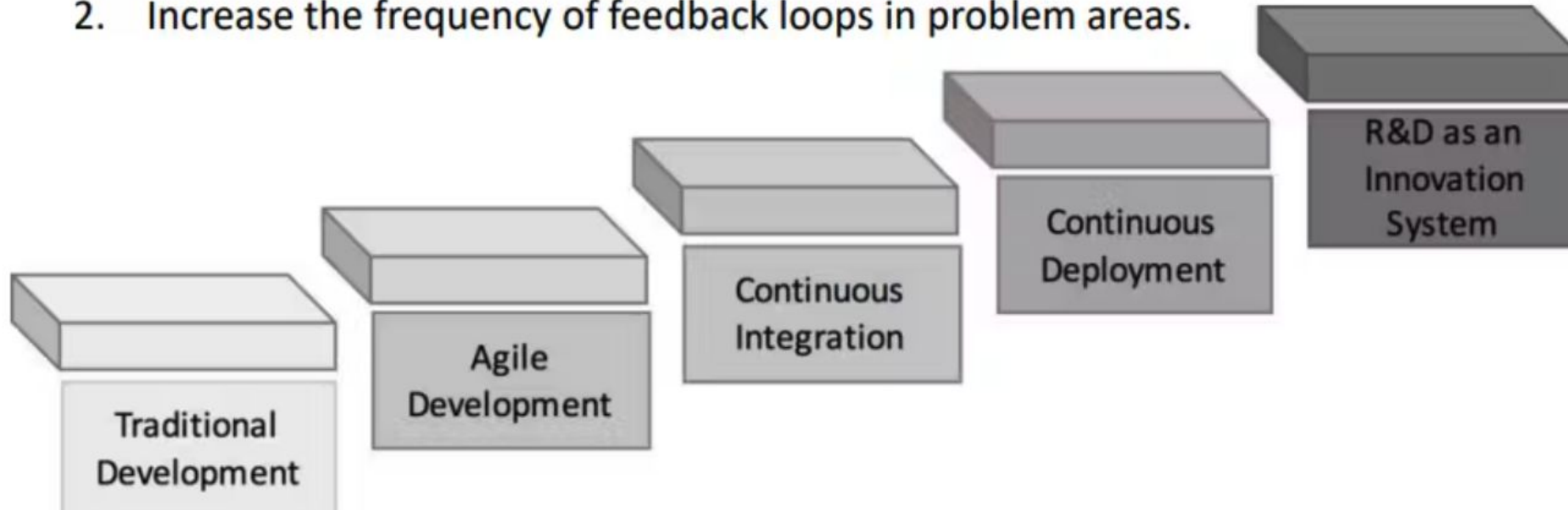
synchronize

Development process maturity ranking?

Stairway to heaven [Jan Bosch]

If a problem develops:

1. Make sure that all feedback loops are in place.
2. Increase the frequency of feedback loops in problem areas.



What is the Pros and Cons of this flow?

Levels of authority

Experiences from a submarine captain: [link](#)



TELL

1. **Tell:** make decision as a leader



SELL

2. **Sell:** convince people about decision



CONSULT

3. **Consult:** get input from the team before decision



JOIN

4. **Join:** make decision together with the team



ADVISE

5. **Advise:** influence decision made by the team



CONFIRM

6. **Confirm:** check decision by the team



DELEGATE

7. **Delegate:** no influence, let the team work it out



Traditional

- **Future is Predictable**
- **Nothing will substantially change**

Therefore...

← **“Predict and Plan”**

- **We make most decisions ahead of time**
- **If we build according to spec, we'll get what we expect**

Agile

- **Change is to be expected**
- **We can't know everything ahead of time**

Therefore...

← **“Sense and Respond”**

- **We plan as we go**
- **We make decisions based on what we learn**

Ad-hoc

- **Prediction is meaningless**
- **Everything is constantly changing**

Therefore...

← **“Just do something”**

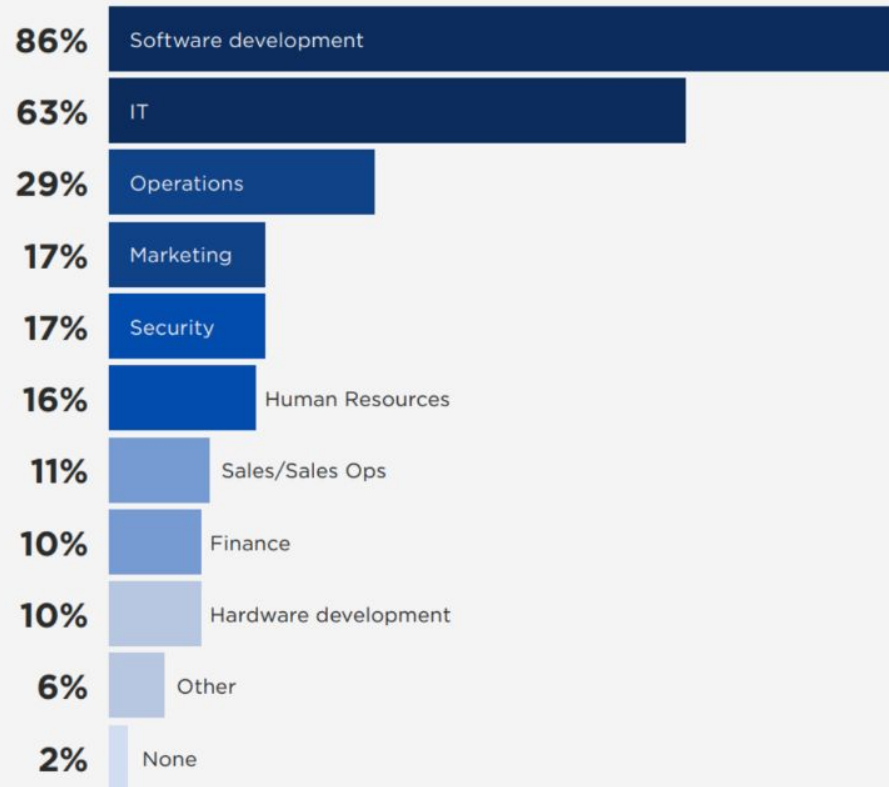
- **The plan is - what to do next**
- **We act (react) on problems**

Moving Towards an Acceptance where 'change happens faster than we can predict.

Agile transformation - Industry view

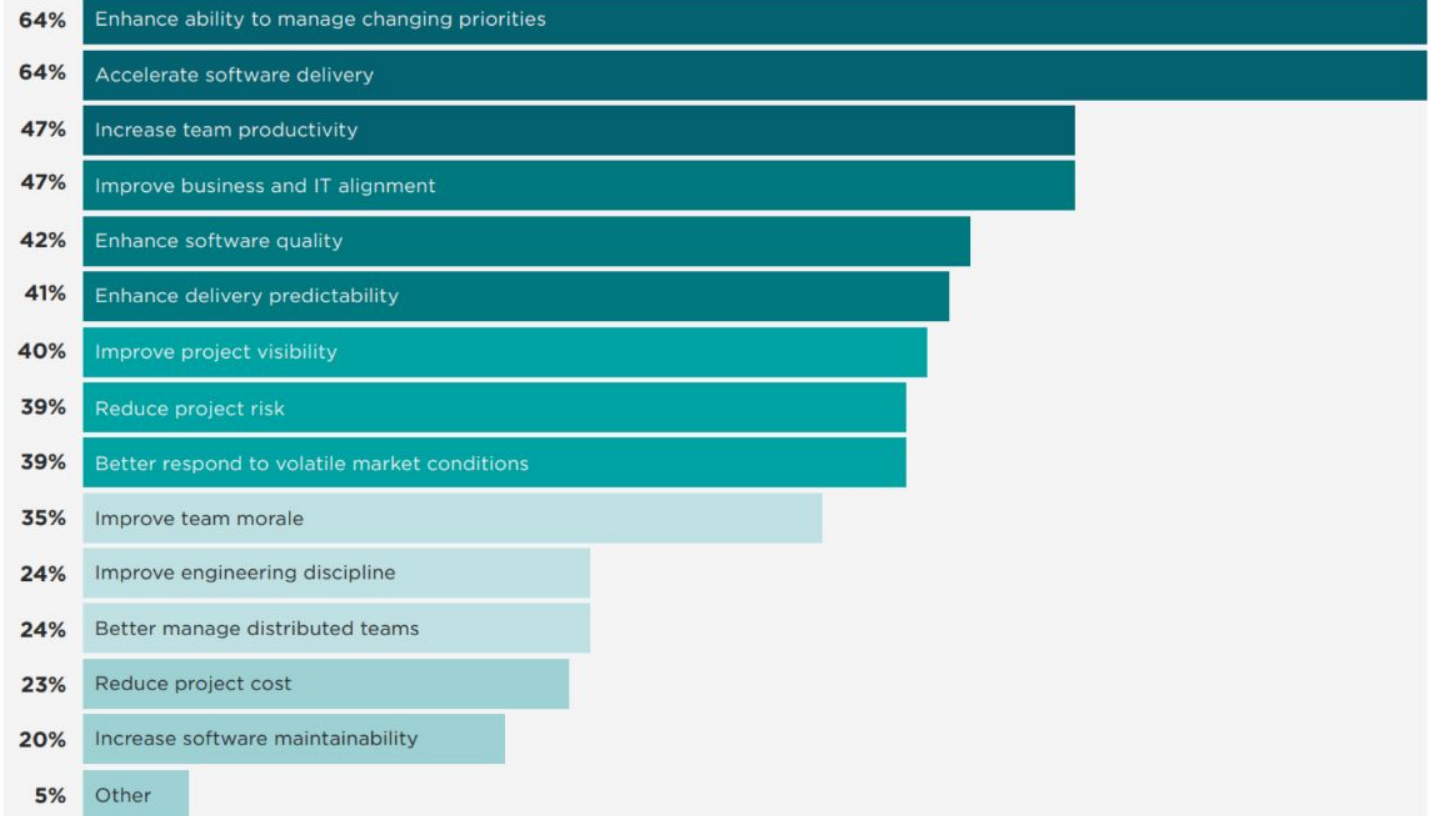
Which areas of your organization have adopted Agile principles and practices?

**Respondents were able to select multiple responses to this question.*



What were the most important reasons for adopting Agile within your team or organization?

**Respondents were able to select multiple responses to this question.*



What is SAFe

The Scaled Agile Framework® (SAFe®) is a set of organizational and workflow patterns for [implementing agile at scale](#). The framework is a body of knowledge that includes structured guidance on roles and responsibilities, work, and values to uphold.

SAFe promotes alignment, collaboration, and delivery across large numbers of agile teams. It was formed and refined by combining knowledge: agile software development, lean product development, and systems thinking.

Core Values

Alignment:

SAFe requires that companies put planning and reflection cadences in place at all levels of the organization. With these in place, everyone understands the current state of the business, the goals, and how everyone should move together to achieve those goals.

Built-in quality:

It requires teams at all levels to define what “done” means for each task or project and to bake quality development practices into every working agreement.

Transparency

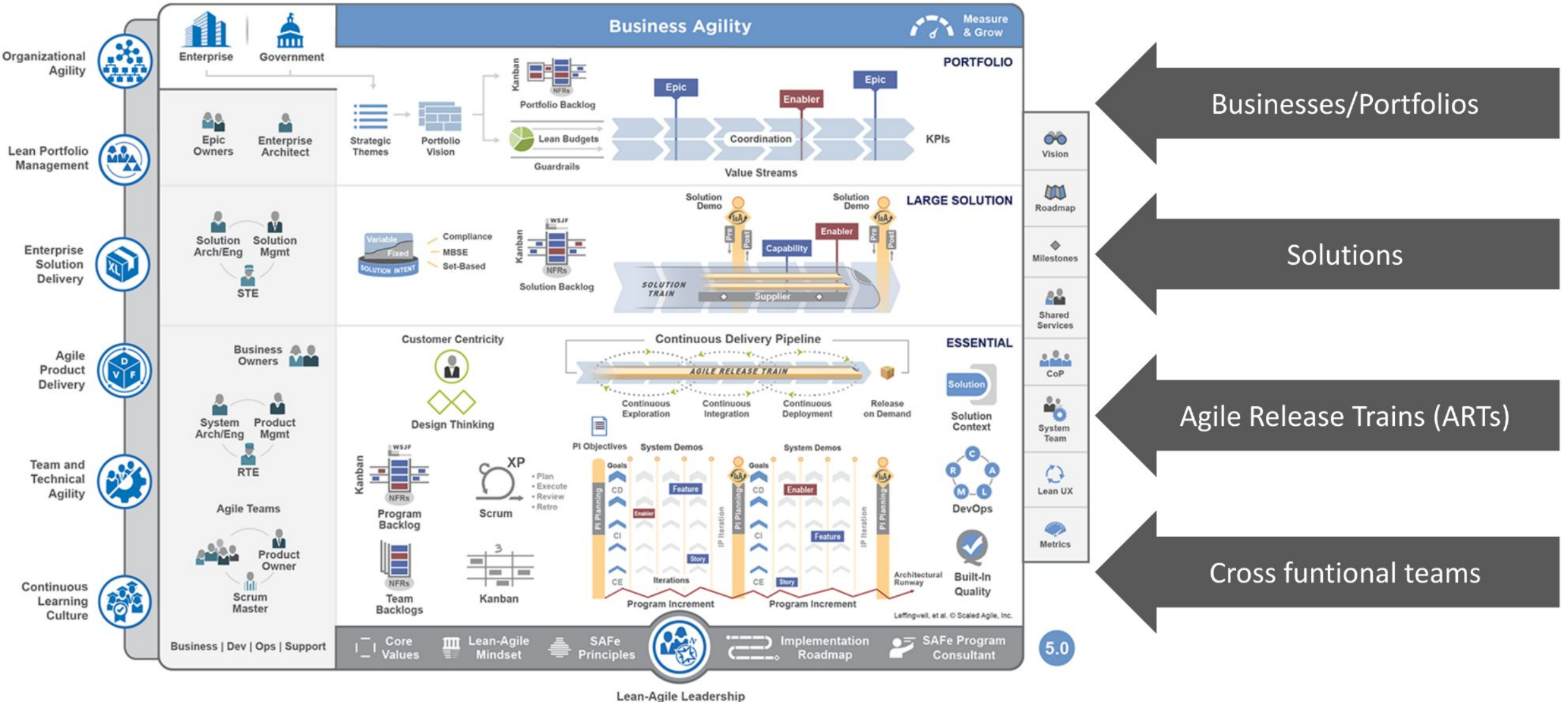
SAFe encourages trust-building behavior, including planning work in smaller batch sizes so problems can be surfaced sooner, providing real-time visibility

Core Values

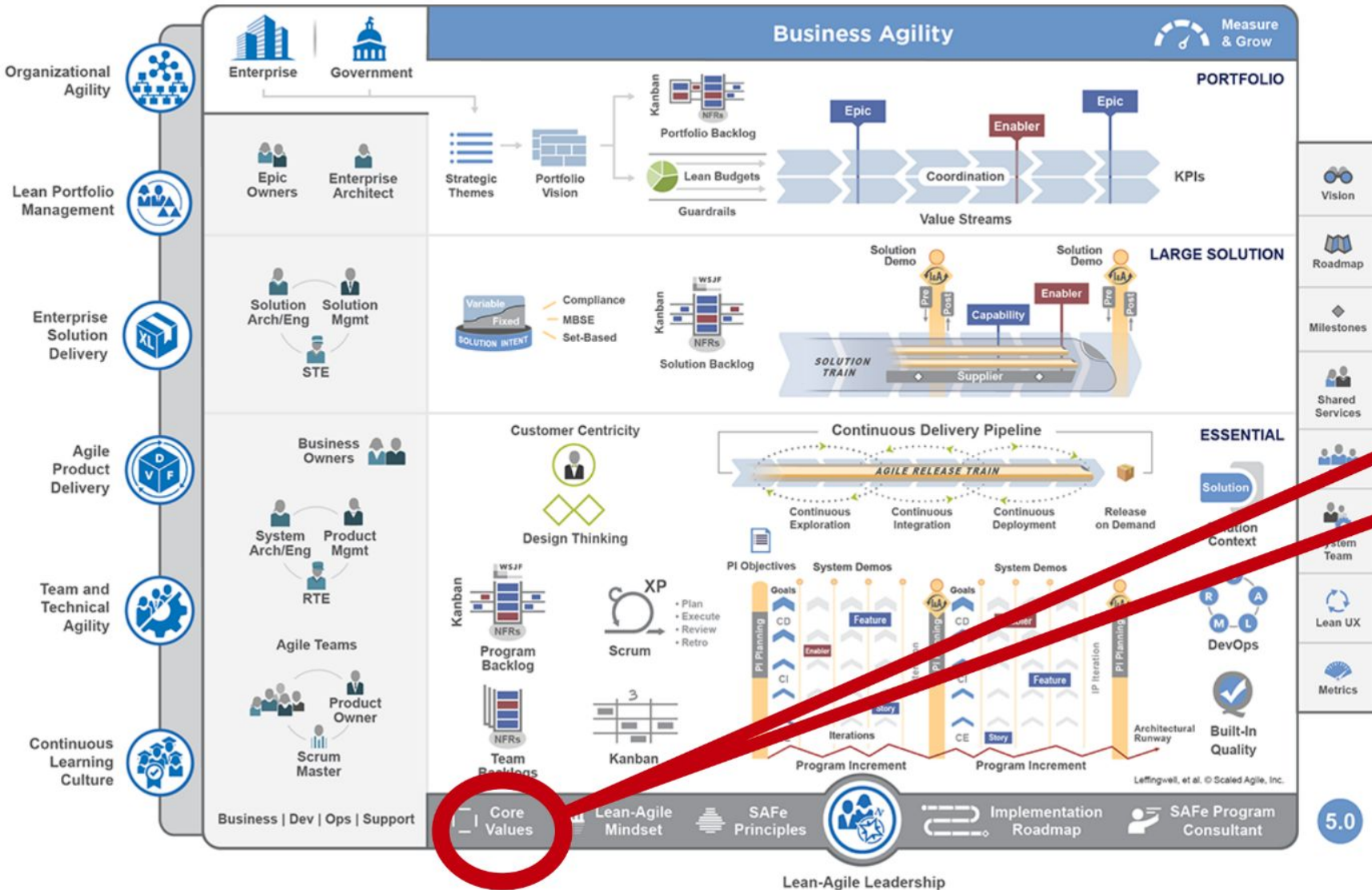
Execution Teams and programs must be able to deliver quality, working software and business value on a regular basis.

Leadership SAFe requires lean-agile leadership behavior because only leaders can change the system and create the environment necessary to embrace all of the core values.

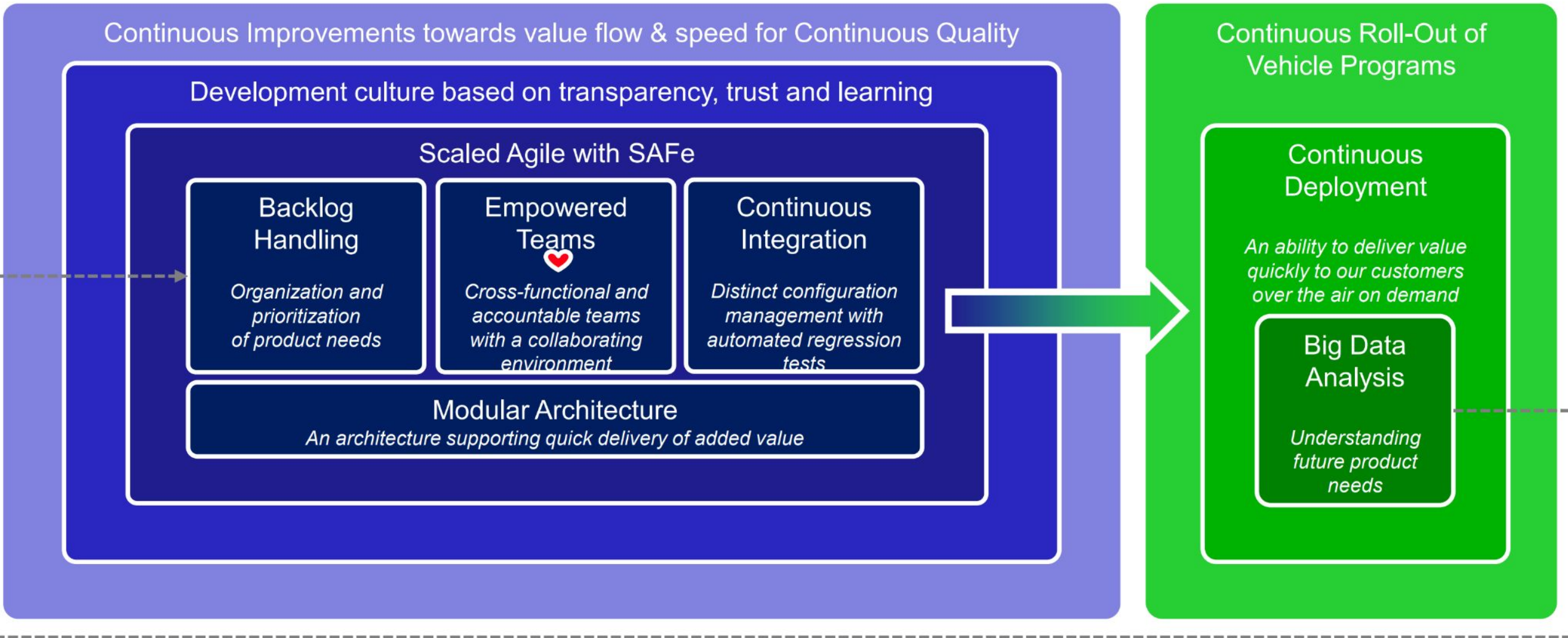
Full SAFe framework



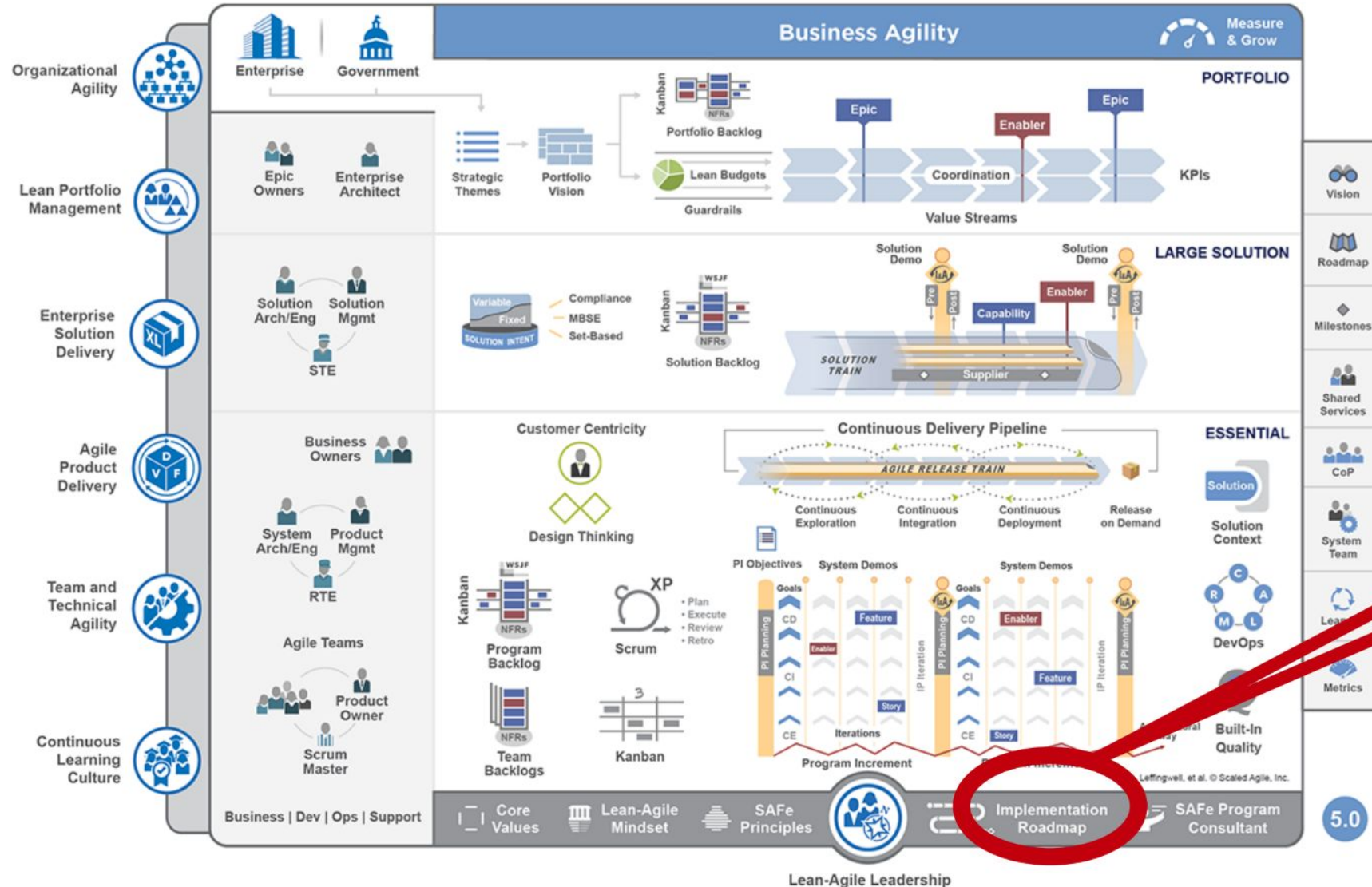
Core values



Core ingredients

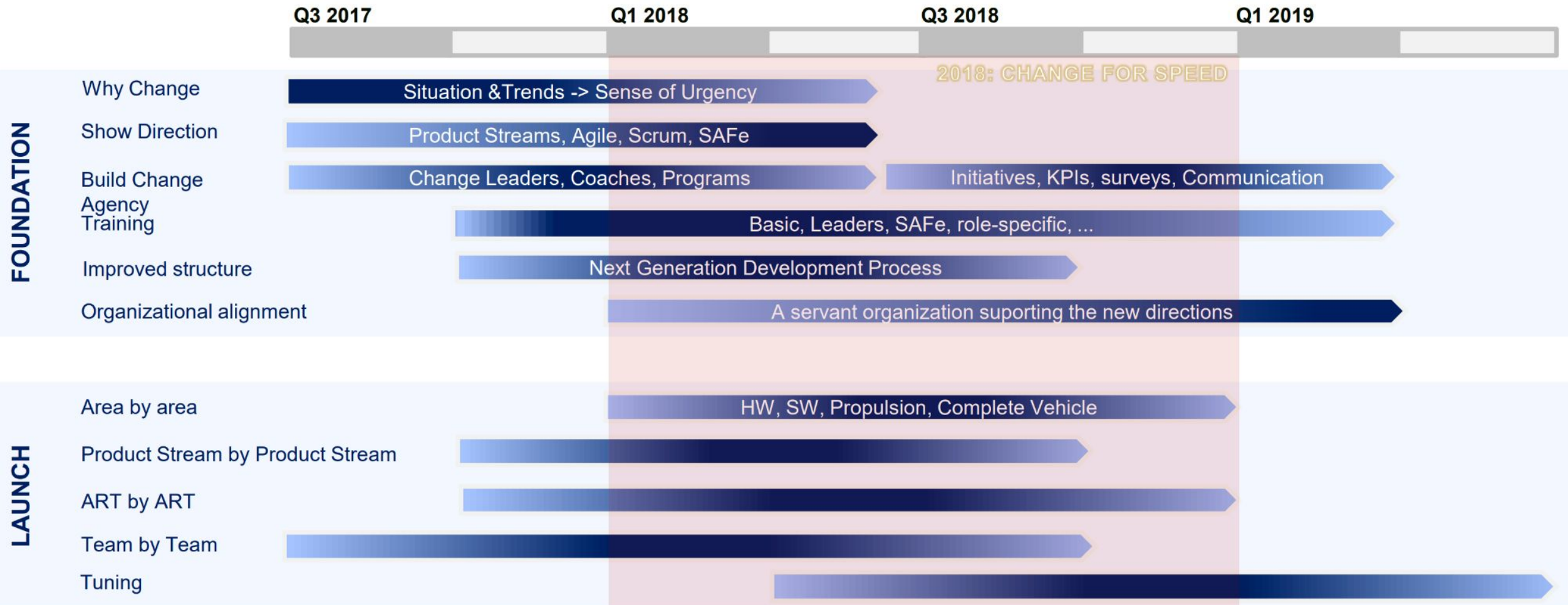


Implementation Roadmap

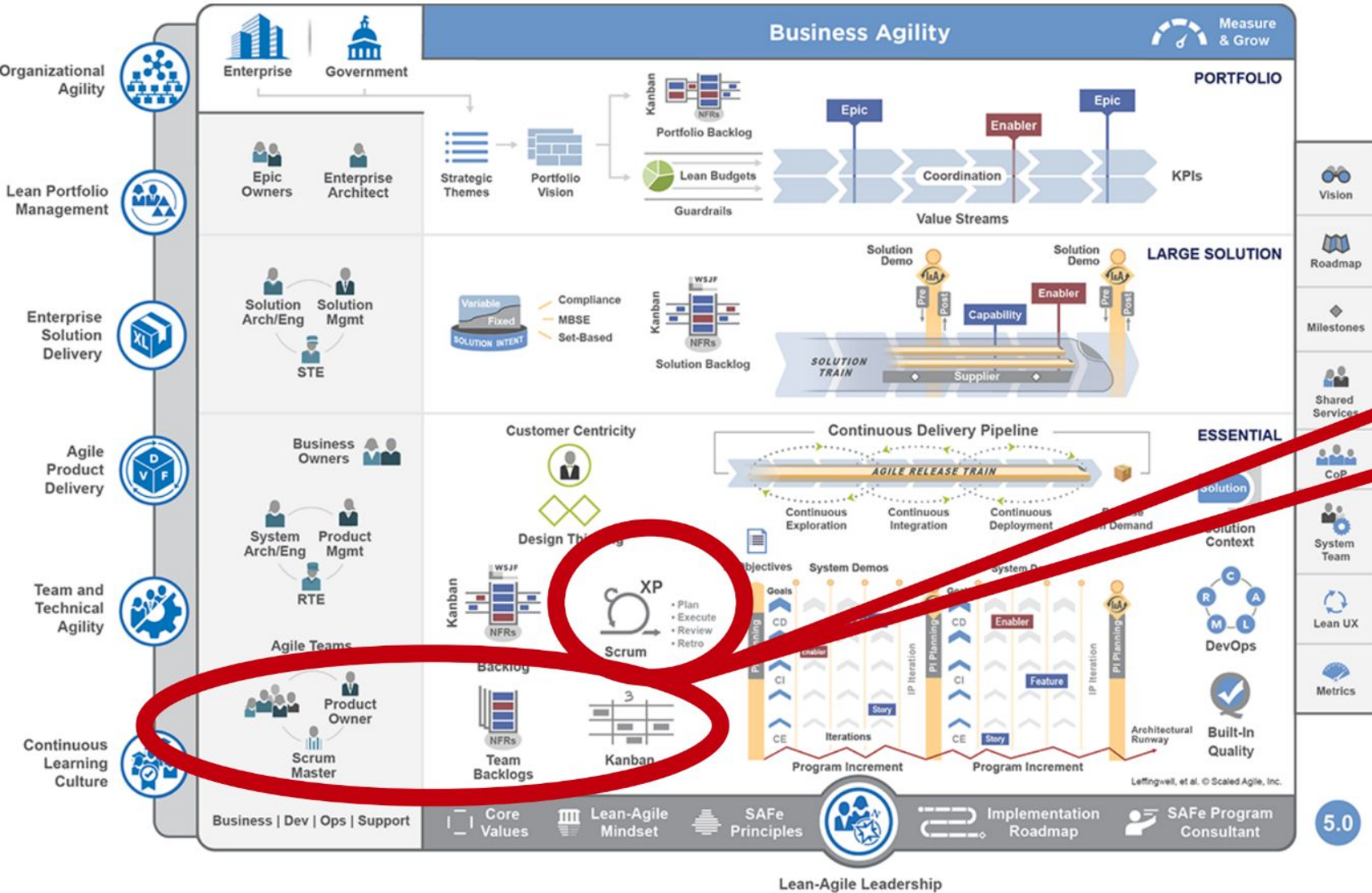


High level steps for the agile transformation of companies according to the framework of SAFe.

High level transformation plan



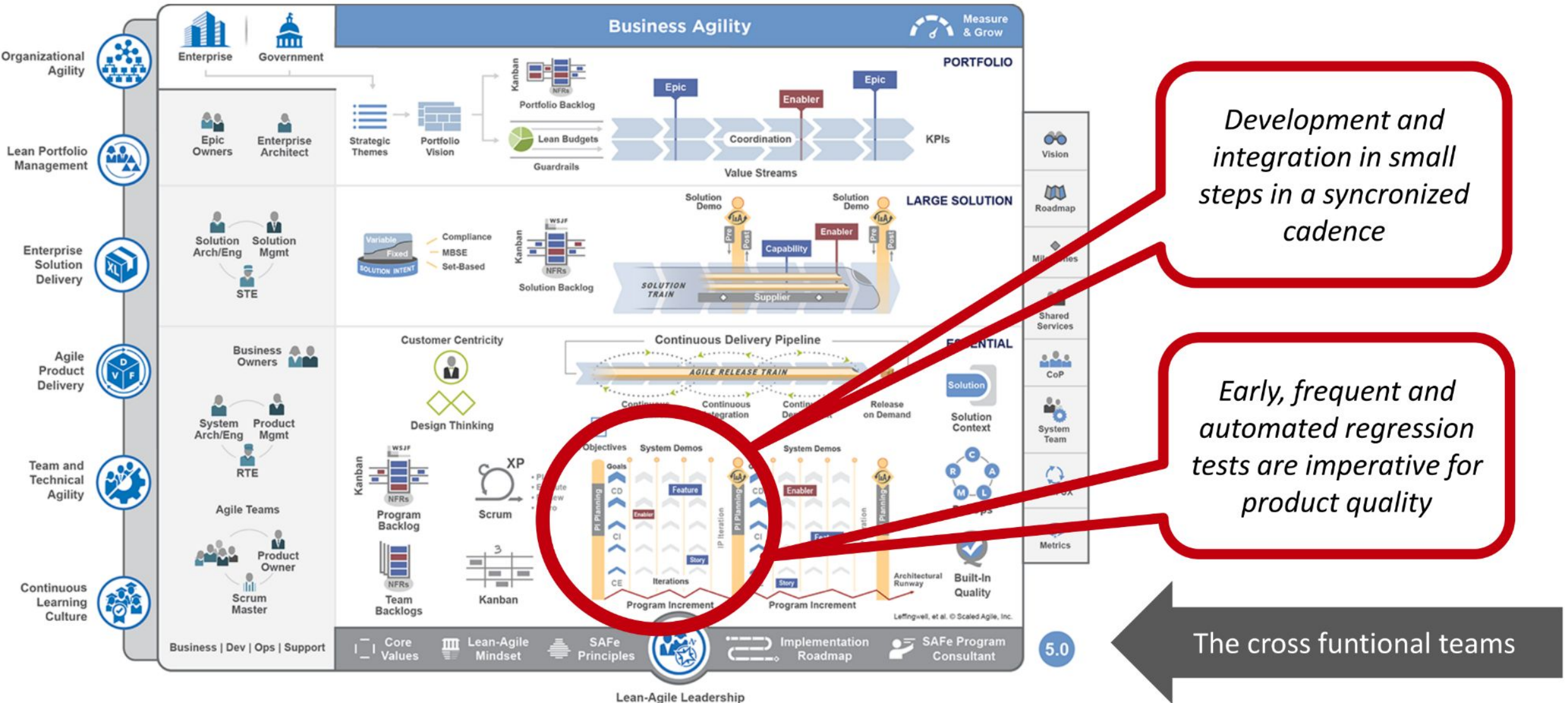
Empowered teams



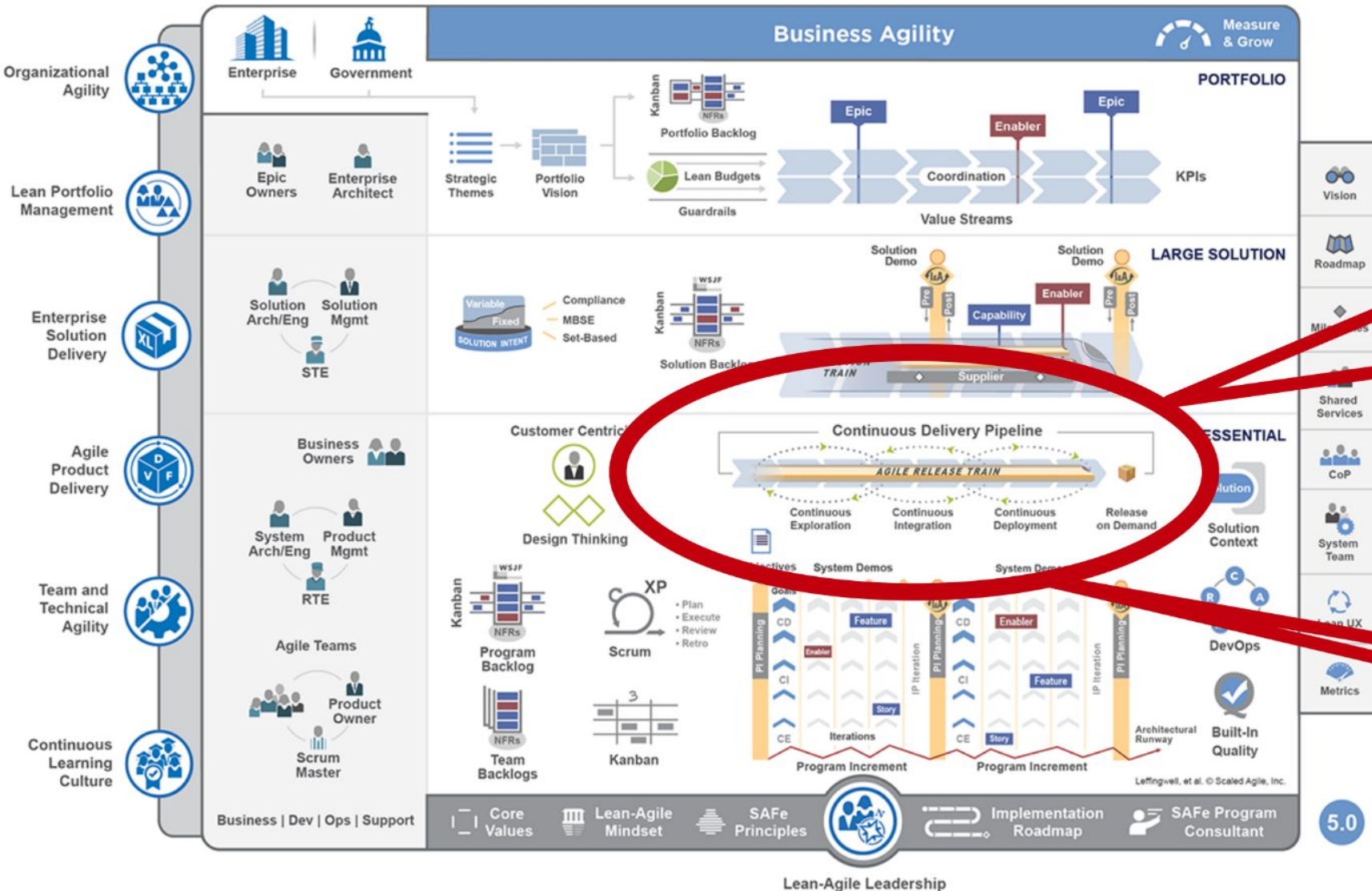
The foundation of SAFe is built on the belief that nothing beats an agile team

The cross functional teams

Continuous development and integration



Agile Release Train (ART)



The ART is a cluster of team that delivers a continuous flow of customer value. It has all needed capabilities and is formed to be as independent as possible

The Agile Release Trains

Aligning 50-125 practitioners to a common mission in a synchronized cadence of 10-12 weeks

ART description template

TEAM_NAME

What do you actually do?

PO: Name_of_PO

ScM: Name_of_ScM

8

TEAM_NAME

PO: Name_of_PO

ScM: Name_of_ScM

8

TEAM_NAME

PO: Name_of_PO

ScM: Name_of_ScM

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TEAM_NAME

PO: Name_of_PO

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TEAM_NAME

PO: Name_of_PO

ScM: Name_of_ScM

8

TEAM_NAME

PO: Name_of_PO

ScM: Name_of_ScM

8

TEAM_NAME

PO: Name_of_PO

ScM: Name_of_ScM

8

PM: Name_of_PM

RTE: Name_of_RTE

Arch: Name_of_Lead_Architect



VISION STATEMENT

Here you write a few sentences about the ART's reason for existence and how it will contribute to our future excellent vehicles.

SCOPE OF THE ART

Here you write a few sentences about the main scope (what you develop) in the ART. You can also mention what is out of scope if you suspect this might be unclear

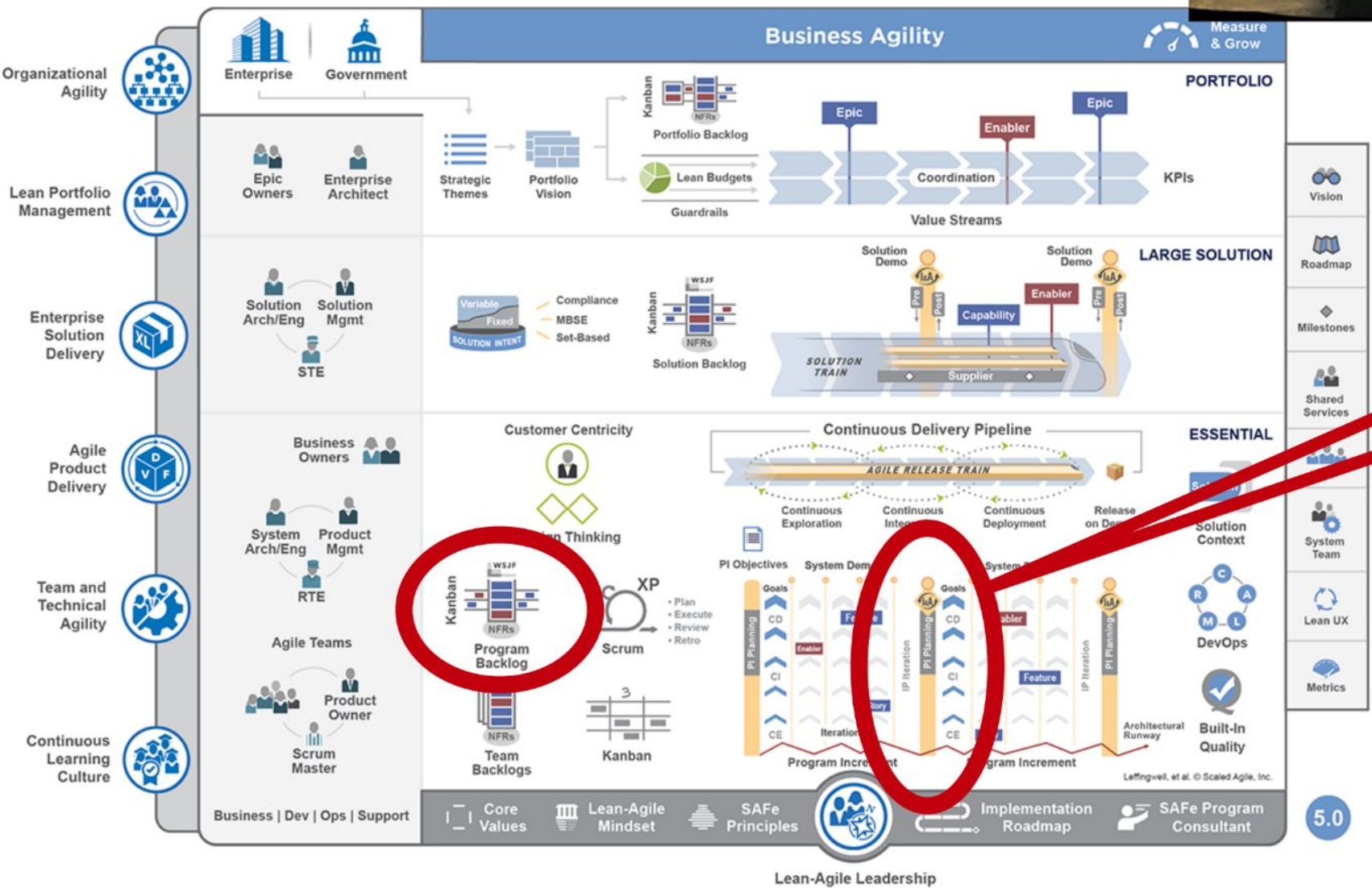
MAIN DEPENDENCIES

Here you write a few sentences about the main dependencies towards key stakeholders (internal as well as external)

SHARED SERVICES

Here you write which shared services or other key roles that contribute heavily to the ART.

Program Increment



The PI planning/Big Room Event is a meeting where all stakeholders meet face-to-face to set the high-level plan for all teams in the upcoming increment

The Agile Release Trains

Develop on Cadence.
Release on Demand

Previous Exam Questions

(2024)

3.4 sAFe

Briefly explain the SAFe framework.

Fill in your answer here

(2022)

3.6 Challenges in Large-Scale Agile

Mention two challenges regarding *Communication* in Large Scale agile.

For each challenge, describe why it is a challenge and propose some possible solutions. (10p)

Fill in your answer here

(2022)

4.3 Case reflection

The case describes a team trying to work agile within a traditional (waterfall-driven) business.

Task A

Reflect on challenges with working as an agile team in a waterfall-driven organization. (6p)

Fill in your answer here

Task B

Reflect on challenges when changing a large company (more than 1000 employees) from waterfall to agile. (6p)

Fill in your answer here

(2020)

Task 1 (15%)

Describe the main challenges that the company will be facing when trying to scale up their processes. Try to mention as many challenges as you can without going too much into details.

(2020)

Task 1 (15%)

- **Resistance to change:** is often a challenge when implementing change. People usually like the old and familiar and are resistant to new and uncertain changes.
- **It takes time to implement changes:** An already high workload while implementing significant change in the whole company may be a challenge. Do people have time to change the way they work and as the whole company is subject to this change? Will it be done in big swoop or incrementally? Both approaches lead to their own set of challenges.
- **Losing trust and motivation:** It is easy to be invisible in a large crowd. When scaling up, organizations must continue to build around motivated people and give them trust, but it is easy to think that the more people, the higher the need for control.
- **Coordination:** The more people working towards a common goal, the more coordination is needed. It is difficult to get an overview of what everyone is working on, often resulting in spending resources on something another person is already doing.
- **Misalignment:** Misalignment between employees while implementing huge change. Some may be more enthusiastic than others which can create or widen rifts in opinion and willingness to change.
- **Lack of coaching/training:** in agile methods can lead to different interpretations of agile methods and how to implement them, resulting in asynchronous expectations and difficulties in communication.
- **Lack of management:** Lack of management participation in the administration and planning of company-wide change can result in differences in implementation and approach while also making the bottom layers of the workforce less willing to change.
- Other:
 - Lack of investments - physical spaces not adequate
 - Risk of falling back to the old practices of working
 - Inconsistent processes and practices across teams (they will have their routines and it will be hard to standardize the practices all over the teams)
 - Lack of skills with agile methodologies
 - Lack of customer availability

Next Week
(Global and Distributed Software
Development)