

# Designing Large Solutions: A structured approach to Value Stream Identification



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First Part

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# Is Value Stream Identification different in Large Solutions?

We fully recommend the SAFe approach in identifying Value Streams and ARTs,  
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System of Systems

Supply Chain

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dedicated refinement phase

preceding the Value Stream & ARTS Identification Workshop to collect in advance the information that will be needed later in the workshop.

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of the Large Solution **exceeds a certain level**, we recommend a

dedicated refinement phase

preceding the Value Stream & ARTS Identification Workshop to collect in advance the information that will be needed later in the workshop.

For this refinement phase we recommend the following procedure...

# Refinement Phase: Areas of concern in dealing with complexity



What are the long-term stable needs of the customer?  
Which value should be delivered?



How are long-term stable architecture  
and interfaces structured?



What stable social structures do we need  
to ensure the value flow?

# Three areas of concern in dealing with complexity

## Long-term stable Architecture & Interfaces

Technical  
Development



## Long-term stable Customer Needs

Product  
Development



## Stable social structures

Organizational  
Development

Analog to the trinity  
of the Big Picture:





# Large Solution Value Stream Workshop






8:00 ▶ 9:00	   <b>Workshop Outcomes</b>	8:00 ▶ 9:00	Planning adjustments
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5:00 ▶ 6:00	<b>Management review and problem solving</b>	After commitment	Planning retrospective and moving forward

Refinement Phase

Big Room Event  
Value Stream & ART Identification Workshop

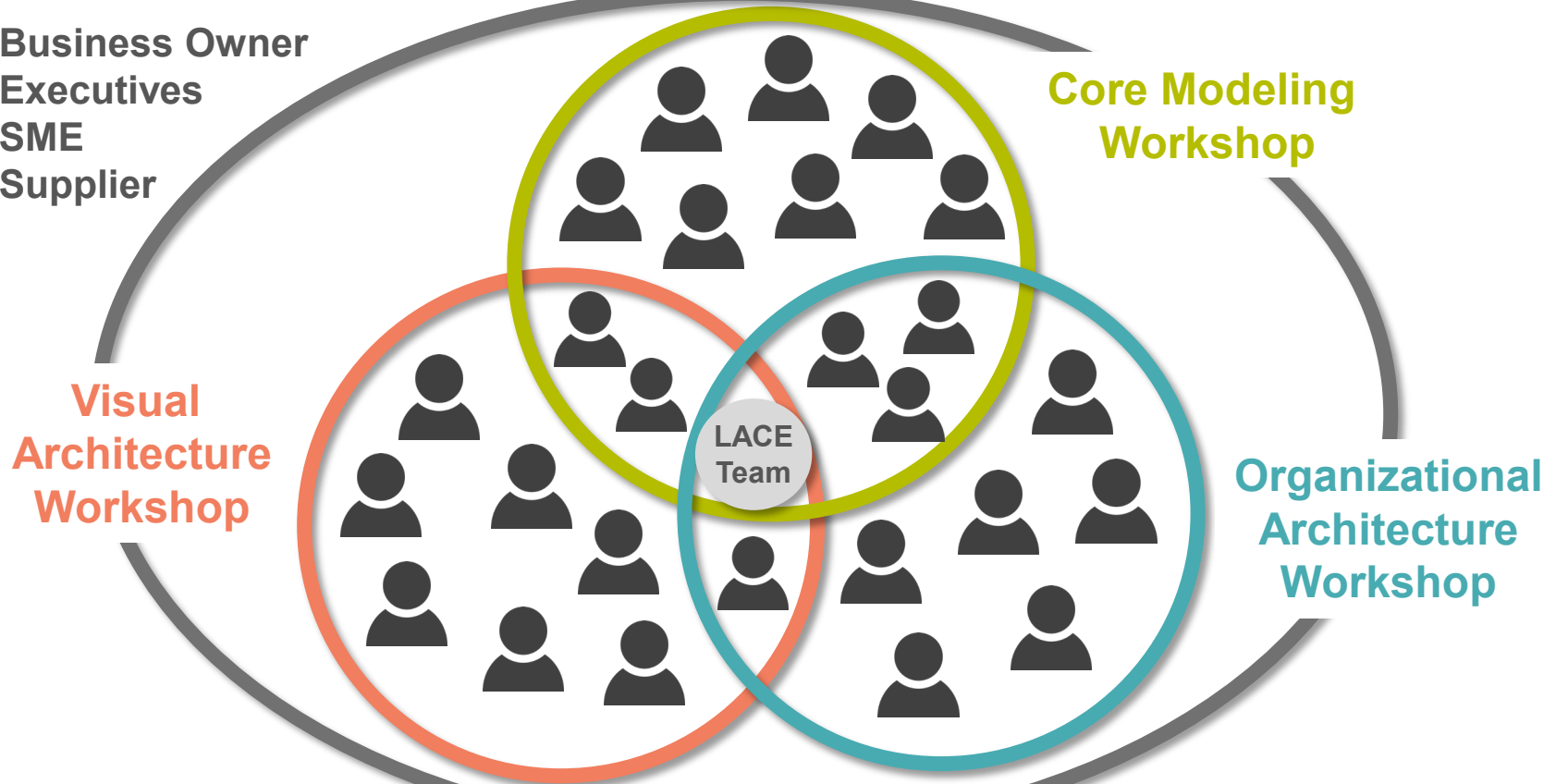
# Structure of workshops

		Workshops	Outcome
<b>Product Development</b>		<b>Core Modeling Workshop*</b> Duration: 2 - 4 days	Understanding of <ul style="list-style-type: none"><li>Operational Value Streams</li><li>long-term stable customer needs</li></ul>
<b>Technical Development</b>		<b>Visual Architecture Workshop**</b> Duration: 3 - 5 days	Understanding of long-term stable Architecture & Interfaces
<b>Organizational Development</b>		<b>Organizational Architecture Workshop</b> Duration: 2 - 4 days	<ul style="list-style-type: none"><li>ARTs, Solution Areas</li><li>Guardrails for Self-Selection Workshops</li></ul>

Source: \* Robert Kochseder, \*\* Luke Hohmann, Scaled Agile



# Who takes part in the workshops?

- Business Owner
- Executives
- SME
- Supplier



# Refinement Phase Part 1



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Refinement Phase

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Value Stream & ART Identification Workshop

# Core Modeling Workshop

- ▶ Identification of the long-term stable needs of the customer
- ▶ Discover problem areas from the customer's point of view



*„Synergies are important:  
Combine water supply and sewage*

*But purpose overrules:  
Separate cooking from visit bathroom“*

# Balance between client interests and tasks

## Workshop steps:

1. Identify & prioritize client interests
2. Identify & prioritize necessary tasks to fulfill client interests
3. Balance between client interests and tasks
4. Resolve conflicts

# Core Modeling Workshop - Example






## Prioritized Tasks

		Prioritized Tasks			
		Primary Focus	Related Tasks		
Prioritized Client Interests	Task Cluster	Avoid problems during Operations	Adjust system parameters to patient	Improve development of product based on usage	Optimize medical diagnosis
	Interest Cluster				
	no interruption of examination	Maintain system only outside examination schedule	Data must be available at point/time of examination	N/A	Easy access to data for analysis
	Earn more money through improved service offer	Charge customer for preventive maintenance.	N/A	Collect data from hospital	Collect data from hospital
	Protection of personal privacy	Analyze user specific behavior which causes problems	Analyze patient to find best parameters	Analyze usage e.g. user/hospital/country profiles	Analyze patient to find best diagnosis
Flexibility for change	New features shall support preventive maintenance	N/A	Impact analysis of new workflows compared to previous workflows	Parameters must be comparable for the whole life cycle	

potential conflict  
 potential synergy

# Refinement Phase Part 2



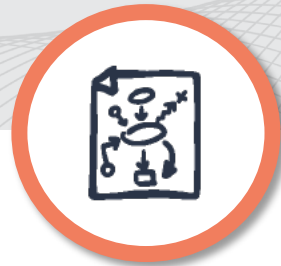
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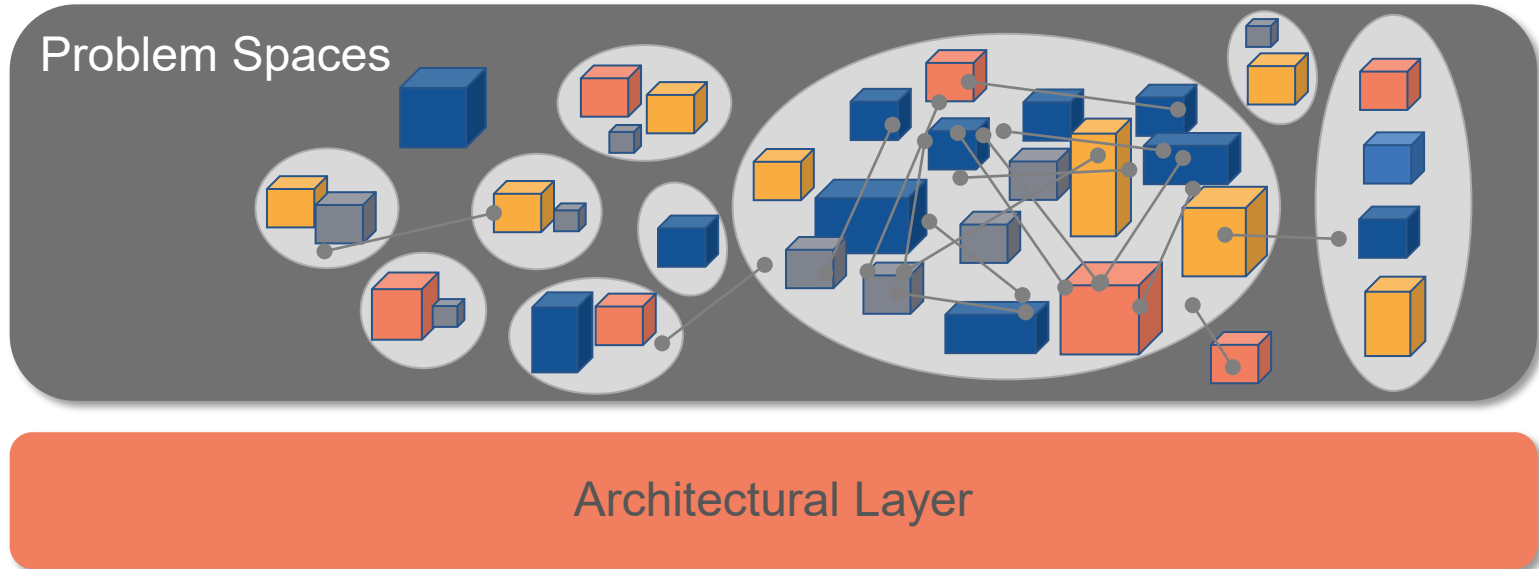
Big Room Event  
Value Stream & ART Identification Workshop



# Visual Architecture Workshop



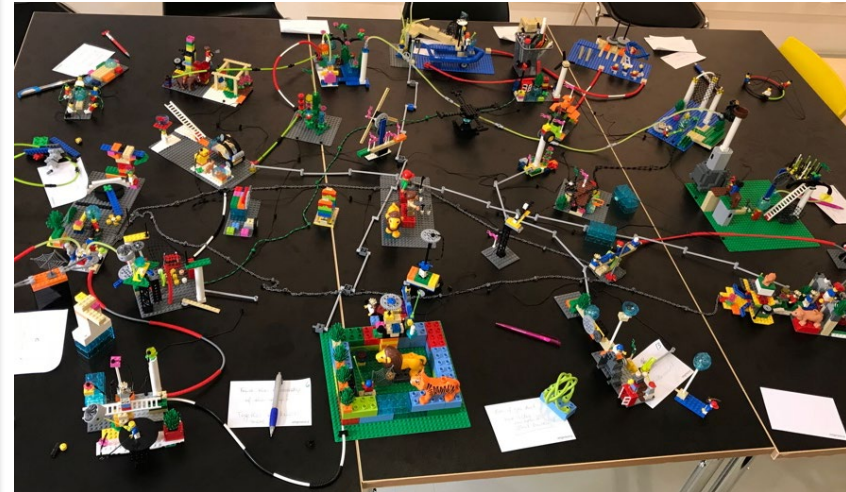
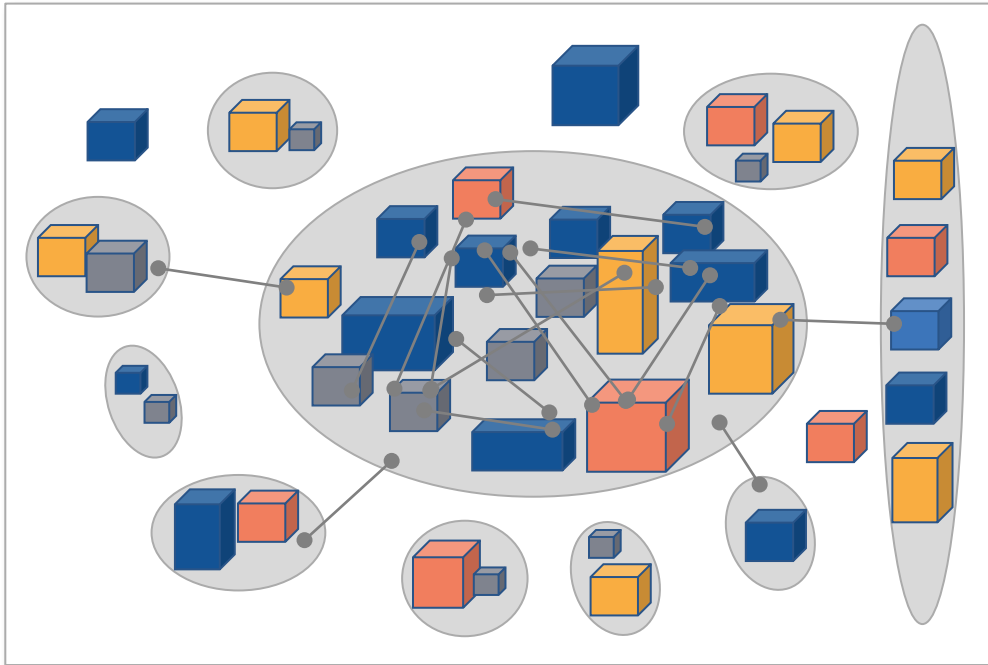
- ▶ Identification of the architecture and interfaces
- ▶ Record the actual and target architecture
- ▶ Identify tightly coupled areas



# Visual Architecture Workshop

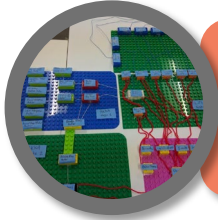


- ▶ Identify tightly coupled and loosely coupled areas
- ▶ Visualization helps to achieve a common understanding and alignment



Idea: Luke Hohmann

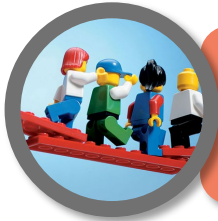
# Visible Architectures ...



... provide a physical model of a system



... enable teams to understand the “as-is” architecture and make better choices on the “to be” architecture



... support alignment between Tech and Business



Second Part

# Dr. Wolfgang Brandhuber

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# Refinement Phase Part 3



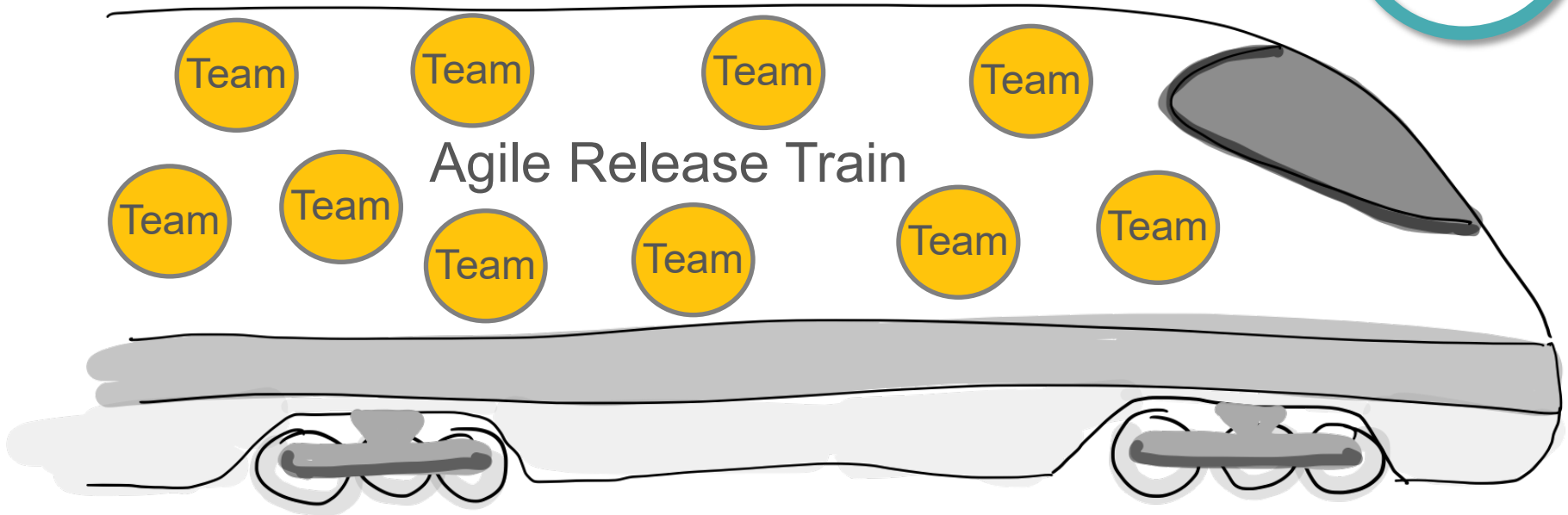
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Refinement Phase

Big Room Event  
Value Stream & ART Identification Workshop

# Organizational Architecture Workshop

The most important aspect of organizational development is the consideration of the train structure.



# Why Solution Areas?

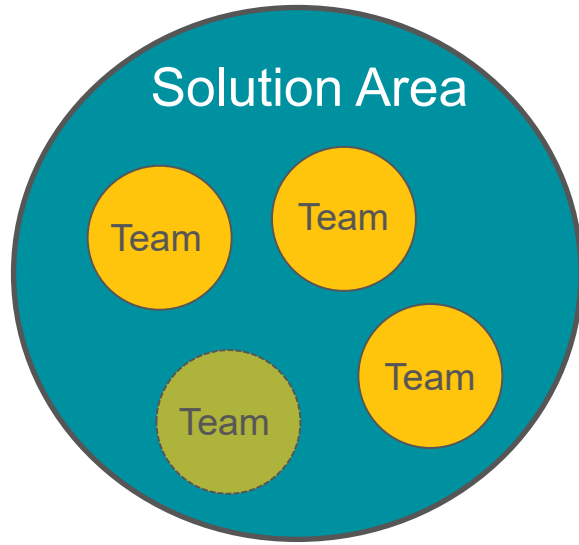
The more complex the problems, the more difficultly it is to bundle all experts in one team.

- ▶ For more complex problems, more knowledge has to be interconnected.
- ▶ Often this is not possible within a feature team → a scaling level between teams and trains is needed that represents a cross-functional unit.

# An additional step in structuring Large Solutions ...

... could be Solution Areas:

- ▶ Solution Areas are built around problem spaces:



- ▶ 3 + 1 Teams
- ▶ High density of dependencies
- ▶ Standard Scrum Roles per Team (1 Product Owner / 1 Scrum Master)
- ▶ 1 Product Manager (recommended)

*Not included in the SAFe Framework*





# Why Solution Areas?

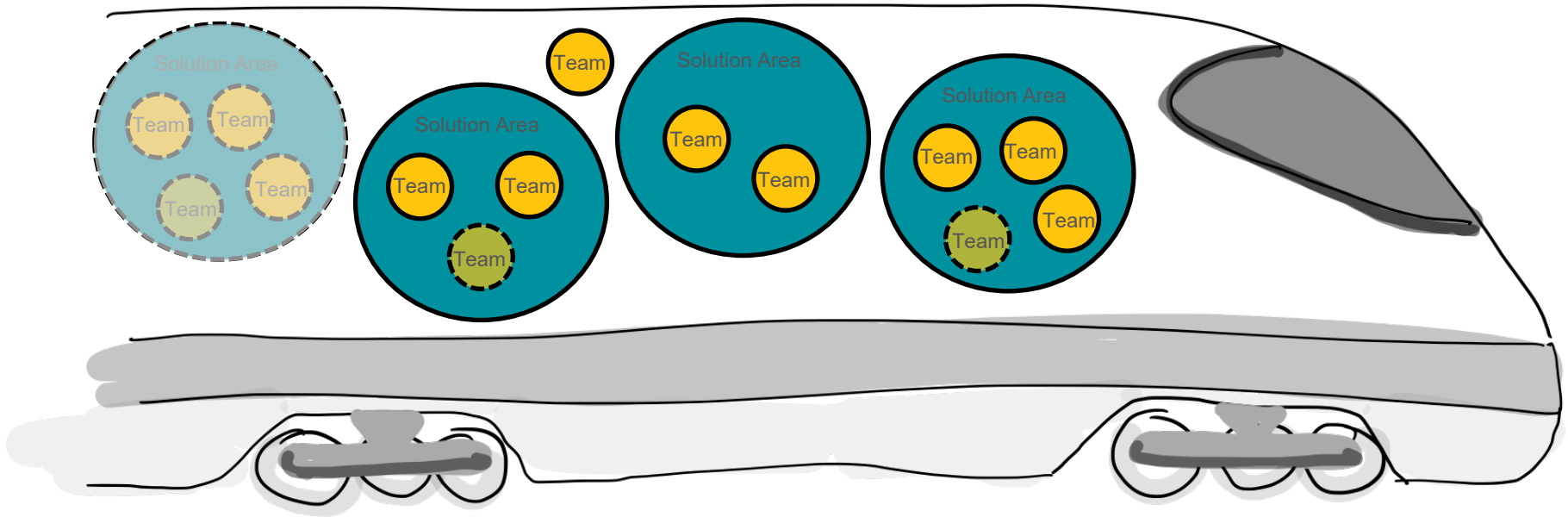
The social units, the large solution is composed of, also have to be scaled up to a higher level.

- ▶ It's not enough to scale up to higher level with a Solution Train.
- ▶ It's a good idea to scale up the team level also to a higher level in order to have better suited building blocks for creating solution trains.

# Solution Areas in ARTs

Usually in accordance to Dunbars Number  
an Agile Release Train contains  $3 \pm 1$  Solution Areas

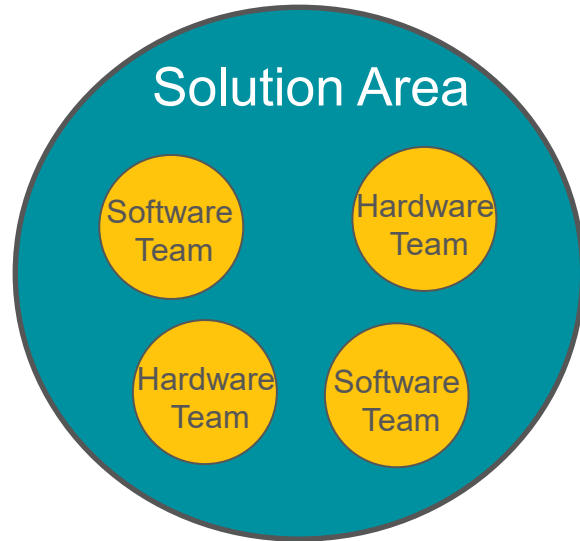
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SAFe Framework



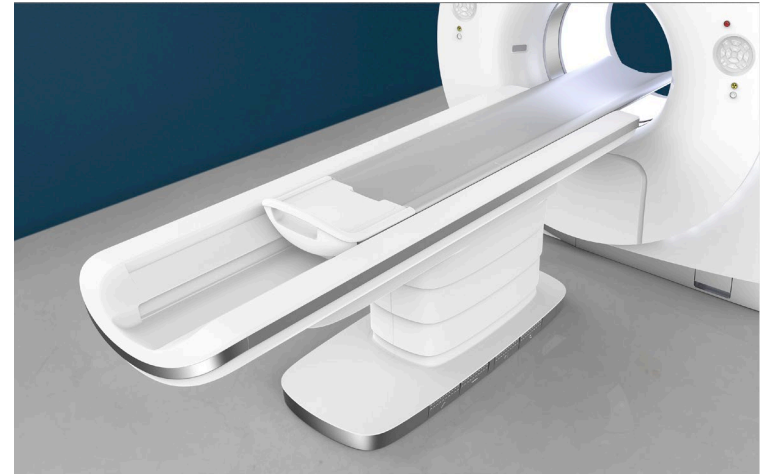
# Solution Area Example

Patient table of a magnetic resonance tomograph

- ▶ 2 Software teams + 2 hardware teams



Generic Example



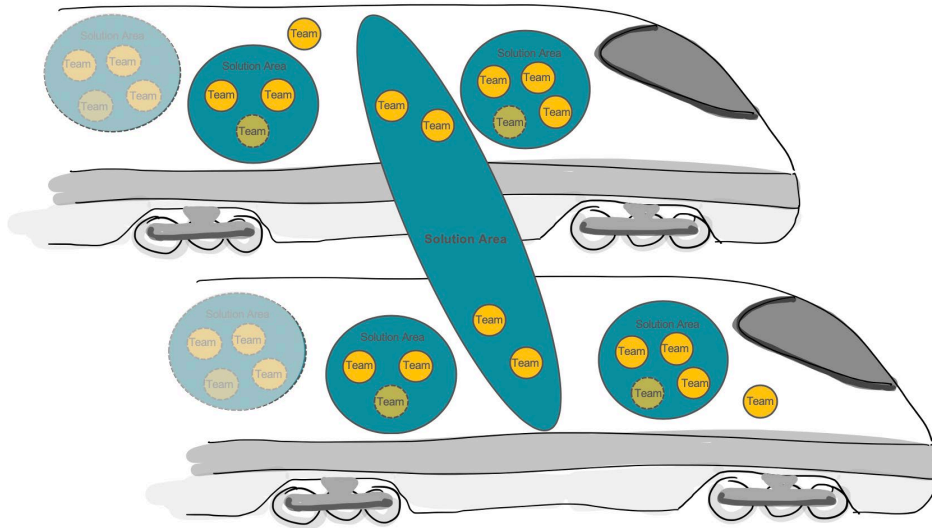
# Why Solution Areas?

With the size of the solution, complexity and dependencies increase and decentralized dependency management becomes mandatory.

- ▶ Solution Areas are self-organizing teams of teams and care for their dependency management themselves.

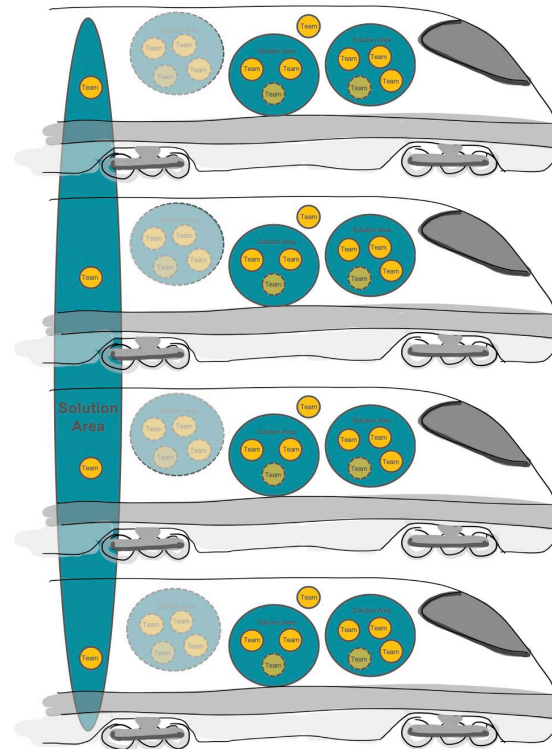
# If required by the Problem Space, a Solution Area can be ...

... cross-train

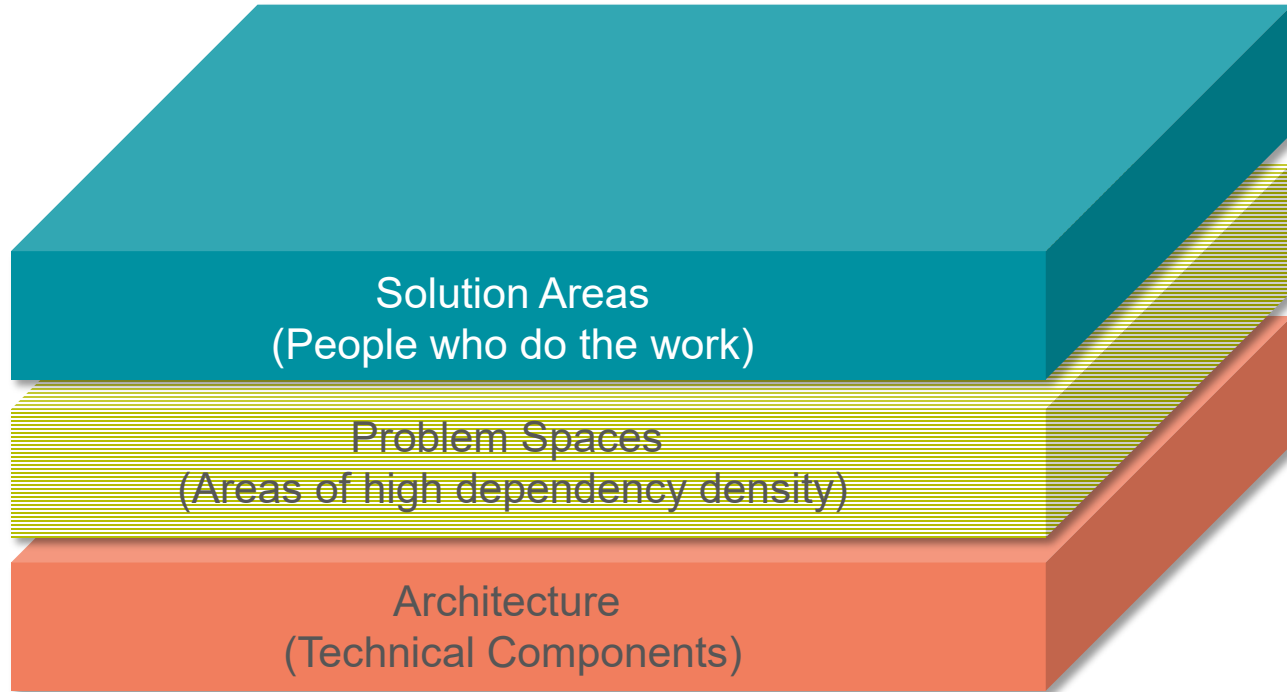


... platform-shaped

Not included in the  
SAFe Framework



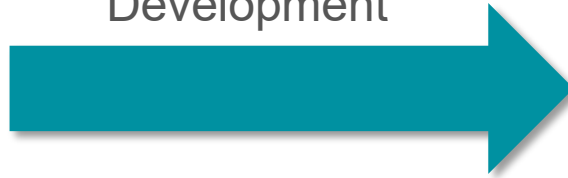
# Total value creation and its components



# Reverse Conway Maneuver



Organizational  
Development



As-is Architecture



Target Architecture

# Recommended Option in Organizational Development:

## ► Preparation of Self Selection Workshop

- Identification of stable social structures:  
Agile Release Trains and Solution Areas around  
the flow of value
- Guardrails for Self-Selection Workshops
  - Which skills do we need in certain Solution Areas / ARTs  
to create the desired value?
  - How much capacity is needed in the  
upcoming increment?








# Value Stream Identification Big Room Event

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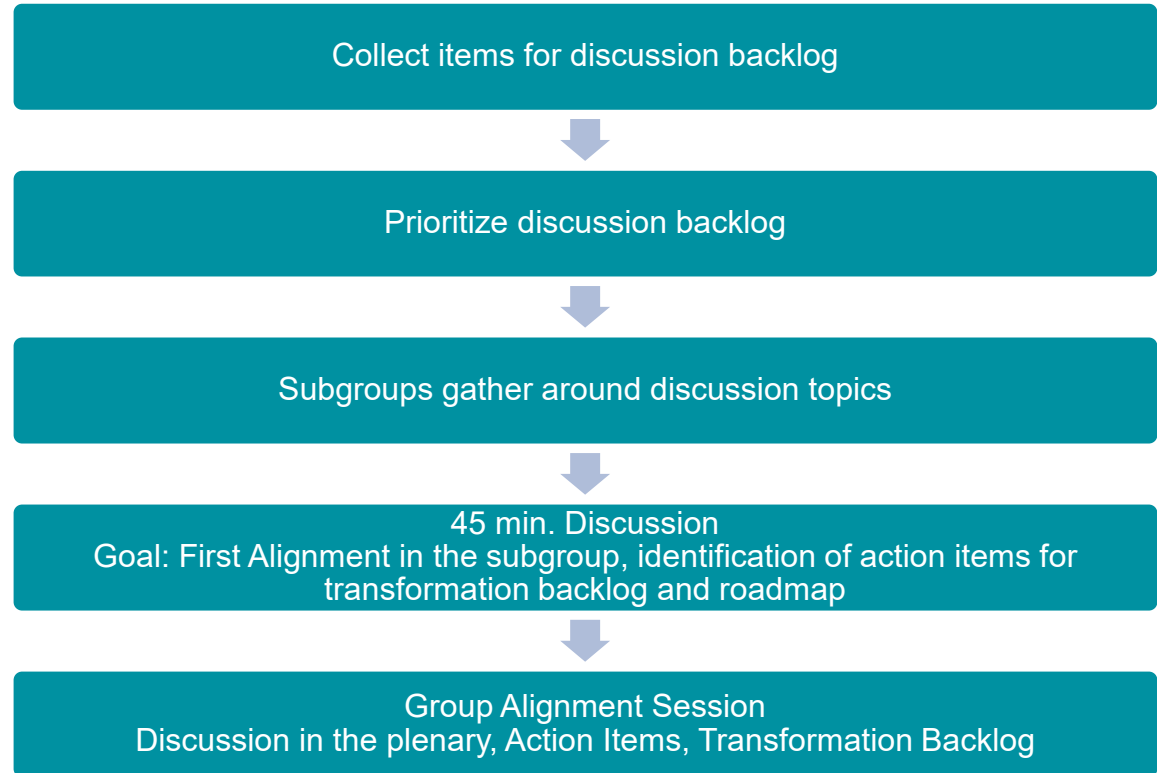
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- ▶ Collect items for discussion backlog
- ▶ Prioritize discussion backlog
- ▶ Subgroups gather around discussion topics
- ▶ 45 min. Discussion
  - Goal: First Alignment in the subgroup, identification of action items for transformation backlog and roadmap
- ▶ Group Alignment Session (discussion in the plenary)
  - Goal: Alignment, Action Items, Transformation Backlog
- ▶ New subgroups around the next discussion backlog items




...




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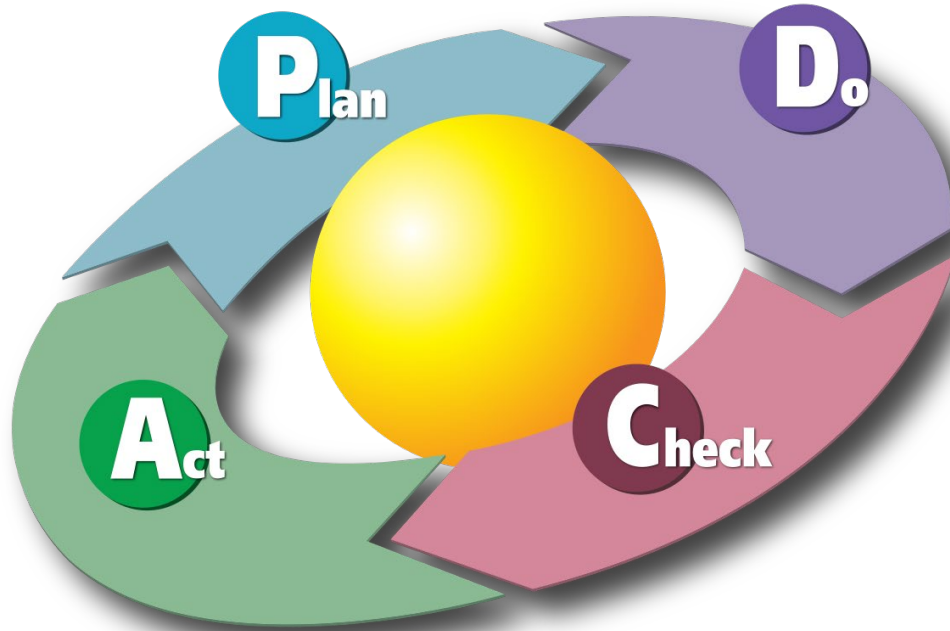
Refinement Phase

Big Room Event

Self-Selection Workshops  
(Recommended)

# Continuous Improvement Process

For complex systems this process should be repeated on a regular basis for instance every half a year to a year

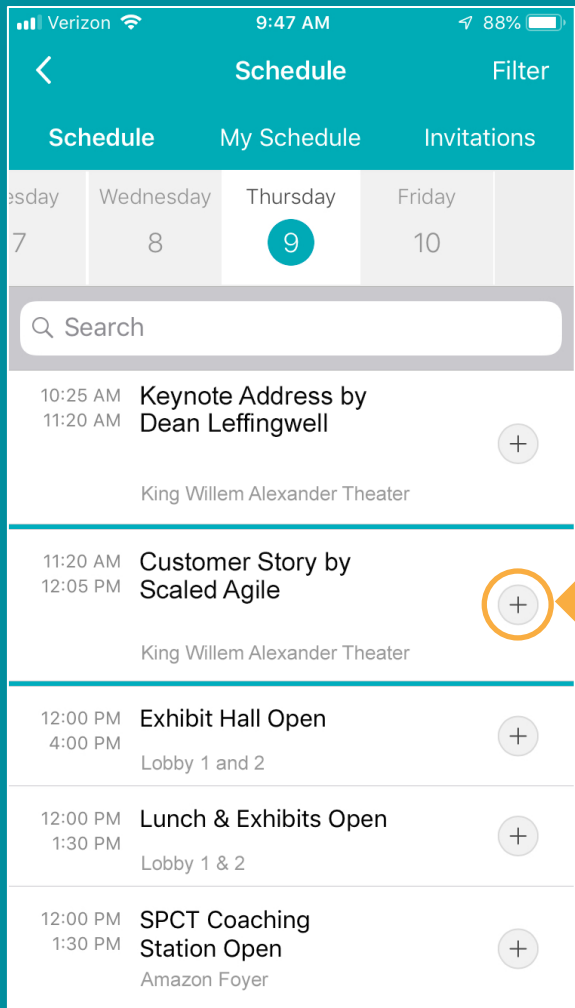


*If it hurts  
do it more often*

# Questions

# Thank you!

Presentation downloads coming soon at  
**[europe.safesummit.com/presentations](https://europe.safesummit.com/presentations)**



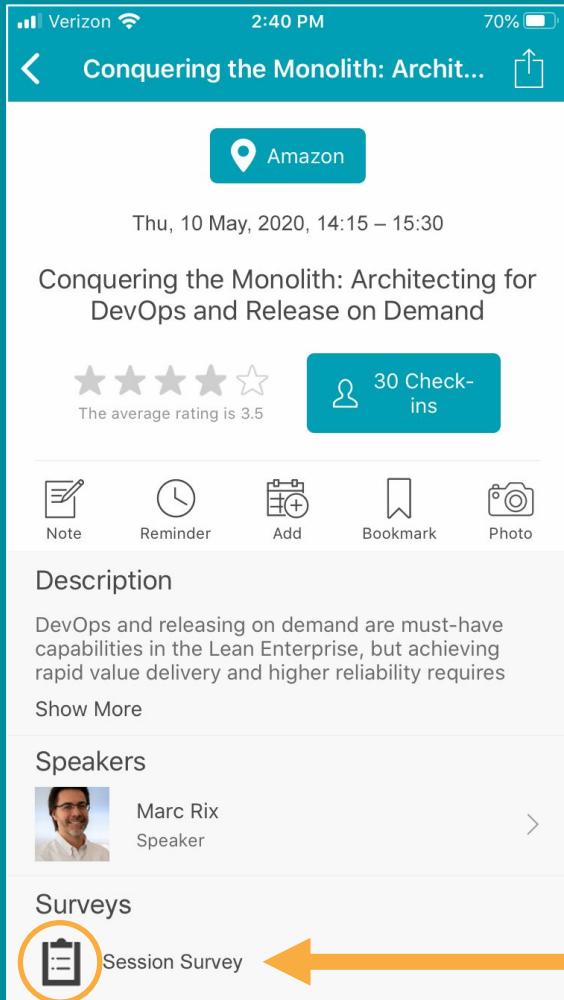
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