Essence
Software Engineering Essentialized
Part 2 – Developing Software w ESSENCE

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Agenda of this Teaching Module

- Essence Card Games … Serious Games
  - Progress Poker
  - Chasing the State
  - Objective Go
  - Checkpoint Construction
- TravelEssence development using Essence
- The development Journey
- Reflection on Essence Kernel

Example of using Essence on our project "TravelEssence" are in green boxes

Module Objective

The goal of this Module is to demonstrate how Essence can help a team run a relatively simple software development endeavor

The simple project of *TravelEssence* will help present:

1. How to use Essence to describe some reusable "mini-practices" called games.
2. How to kick start a development using Essence only.
3. How to plan the work, do the work, check the work, and adapt the way the team works.
4. How to visualize progress and health, and detect anomalies.
5. How to appreciate the need to make practices explicit and modular when facing more complex situations

Applying Essence in the Small

- Software Development team performance is strongly dependent upon effective communication, common understanding and trust.
  - Having a simple practical way to share our approach to Software Development and the guidelines that drive our decision is key
- Essence kernel and practice elements can be represented as poker-sized cards.
  - A card provides a concise description of the most important information about its element.
- Essence can be used leveraging these cards to facilitate team discussions and agreements
  - in a tacit manner without explicitly described practices on top of it.
  - we will also introduce some simple, small but very useful techniques to facilitate working together within a team

We call these techniques games – serious games

Playing Serious Games

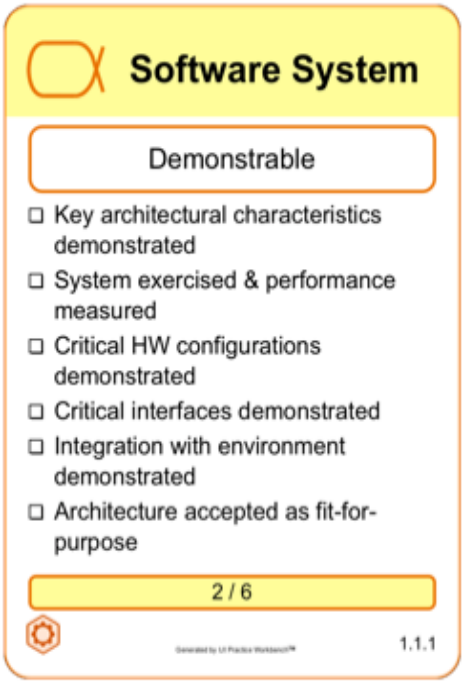
- The serious games utilized in software engineering are:
  - collaborative cooperative games rather than competitive games
- Serious games helps achieve several key goals
  - Facilitate team communication, needed because different members within a team often have different backgrounds, experiences and project status perceptions
  - Players must express their thoughts clearly, listen to one another, share information and resources, learn from one another, identify solutions, negotiate, and make common decisions
  - Teams can use the cards to look ahead at states and checklists not yet achieved thus stimulating discussion on what is most important to do next.
- We will introduce four games using Alpha State Cards:
  1. Progress Poker
  2. Chasing the State
  3. Objective Go
  4. Checkpoint Construction
- Reader and students are encouraged to play these games. The more you play, the more the value becomes visible and appreciated

GAME 1: **Progress Poker**

- One of the most important questions teams often face is "**Are we done?**" referring to a particular piece of work being completed.
- While there are several definitions of done, Essence definition relates to:
  - **the movement of an alpha from one state to another state**
- **The goal of this game is to assess the state achieved by an Alpha**

For example:

- **Software System** alpha:
  - Over the lifecycle of a software system it moves over six different states.
- **What does it take for example to move from *Architecture Selected* to *Demonstrable*?**
  - The State card Demonstrable has a checklist of what it means to have achieved such state
  - Yet, the team could be in disagreement on mark some of the checklist items



Why to play **Progress Poker**

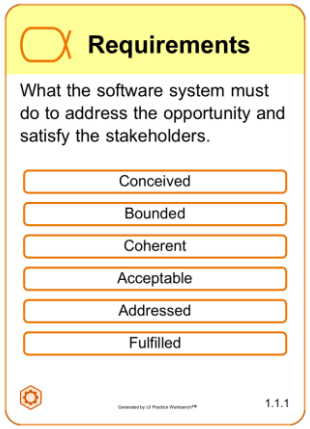
- Take for instance the item:
  - Key architectural characteristics demonstrated.
- Is the meaning of this checklist item clear?
  - Some people would say they know what it means, but within a team members can make several interpretations.
    - One team member may say that this means that the key architectural characteristics have been agreed to and demonstrated to the team members,
    - Another may think it means the agreement and demonstration must involve external stakeholders.
  - It is true that the checklist items do not provide a precise definition.
    - If they were they would likely be unintelligible to most developers.
- They are subject for interpretation by the team members
- **One way to reach an agreement is by playing the game Progress Poker.**

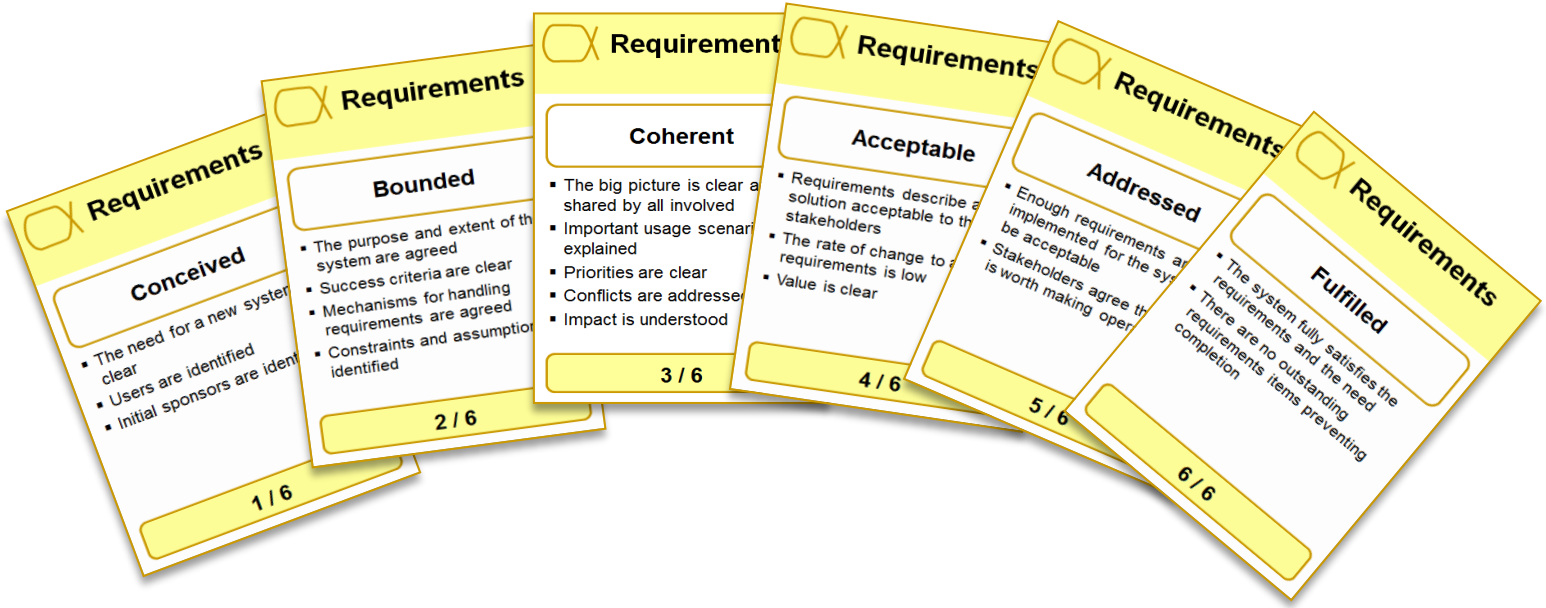
How to play **Progress Poker**

- Progress Poker is a game played to facilitate the discussion and achieve understanding of the current state of a particular alpha.
  - It is played one alpha at the time
  - Each team member should have the full deck of cards
- For the particular alpha the team is trying to gain an understanding of the current state, you need
  - the Alpha Overview card and
  - the Alpha State cards
- There is no single winner
  - The winner is the whole team and **the winning hand is the team's common agreement on the endeavor status**
- Progress Poker may be played by any number of players
  - Teams consisting of three to nine players are most effective

Requirements state with **Progress Poker**

As an example: these are the cards used to assess the requirement alpha state





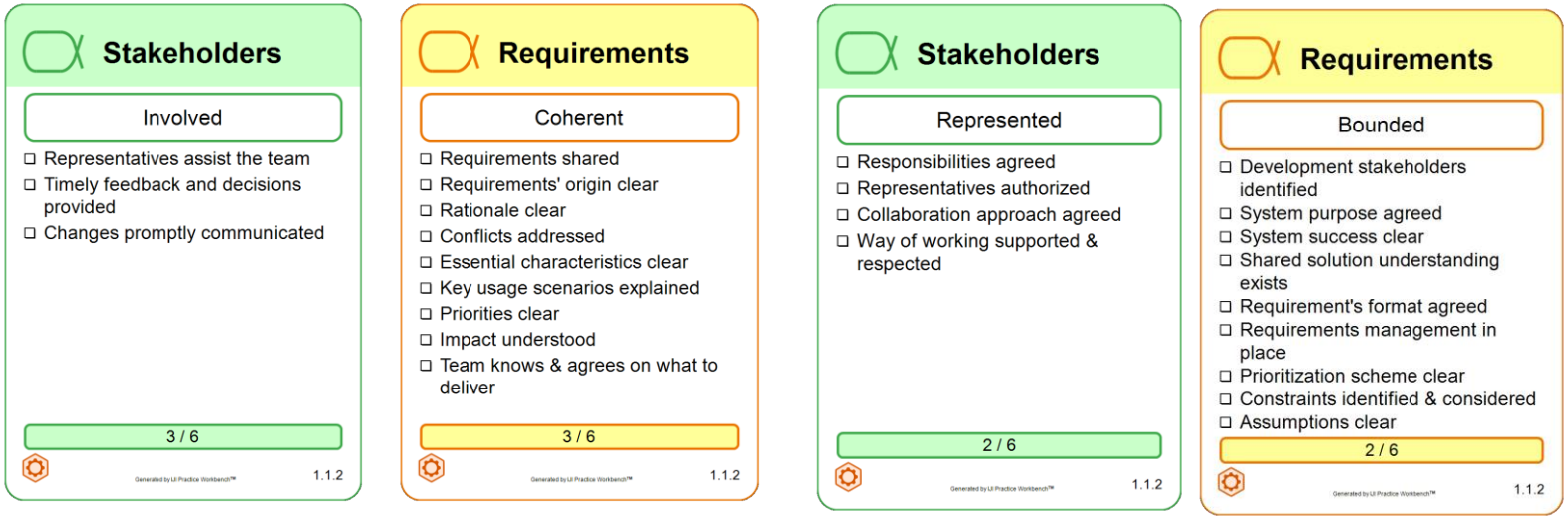
A hand playing **Progress Poker**

- Place the alpha card being assessed in the center of the table
- **Each player select from his deck the state card that represent the state of that Alpha, in his opinion**, and put on the table covered (confidential)
  - So, they make sure that everyone's initial opinion is not affected by anyone else's opinion.
- The players then turn their chosen state card face up and compare the results
- **If all players have selected the same state card**
  - They have the same understanding of the endeavor status
  - The game is over
- **If the cards are different**
  - The players have to discuss their choices
  - Usually, the players with the least and the most advanced states should start the discussion motivating their reasons
  - The discussion helps revealing the details of the endeavor status
- After the discussion a next round of status card selection is done
- The **game ends as soon as a consensus has been reached** on the current state that has been achieved for a particular alpha
- There is no fixed duration of the game
  - Teams familiar with the states and checklists may only take a few minutes to play
- In contrast to the original poker game, **everyone has to take part** in all the rounds of the game
  - The winning hand here is the agreement of the entire team.

TravelEssence Team Playing **Progress Poker**

- Smith and his team are assigned to add to TravelEssence a recommendation engine for travellers
  - Specifically to recommend hotels and discount deals to travellers based on their travel history
- The team played the Progress Poker game seven times
  - one for each alpha

- They were already initially in agreement for all the alphas apart from the **Stakeholders** and **Requirements** alphas



Smith's hand

Grace's hand

Team positions and discussion

Smith's position

- Smith thought the Stakeholders were quite well represented and the members were actively involved helping the team.
  - For example, Angela, as a business analyst was a key stakeholder who he had been talking to about the requirements for the recommendation engine
- Smith thought the Requirements were fairly clear
  - Because of the work Angela had done

Grace's position

- Grace pointed out that in the past, business analysts frequently did not represent stakeholders well
  - They would say one thing, and when it was close to delivery, some higher-level authority would say something quite different.
  - Therefore Grace saw the Stakeholders as Represented, but not Involved.
- Grace also pointed out that it was not clear how the new requirements would affect the existing functionality of the Hotel Management System (HMS).
  - Therefore Grace saw the Requirements as Bounded, but not Coherent.

After the discussion:

- Smith agreed that while Angela had completed some relevant analysis she had not yet gone back to the customer stakeholders to gain their agreement
  - This created a risk to the endeavor and they all agreed the *Stakeholder* current state is: **Represented**
- They also agreed the *Requirements* had achieved the **Bounded** state, but more work was needed to get to the Coherent state

GAME 2: **Chasing the State**

- Often teams are in agreement on which states most of the alphas have without having to play Progress Poker
  - they just look at the cards for each alpha and agree on which state has been achieved
  - This faster way for achieving team agreement on where they are for all the alphas is represented by this card game
- **The goal of this game is to quickly assess the state achieved by ALL Alpha**

- This game is initiated by laying out all the cards on a table for each alpha.
  - To the very left is the alpha overview card with a picture of all the states of the alpha.
  - To the right are all the alpha state cards with the first state card on the left and the last state card on the right.
  - See Next slides

Chasing the State initial board

The initial board when starting playing Chasing State is like this one

Stakeholders

Opportunity

Requirements

Software System

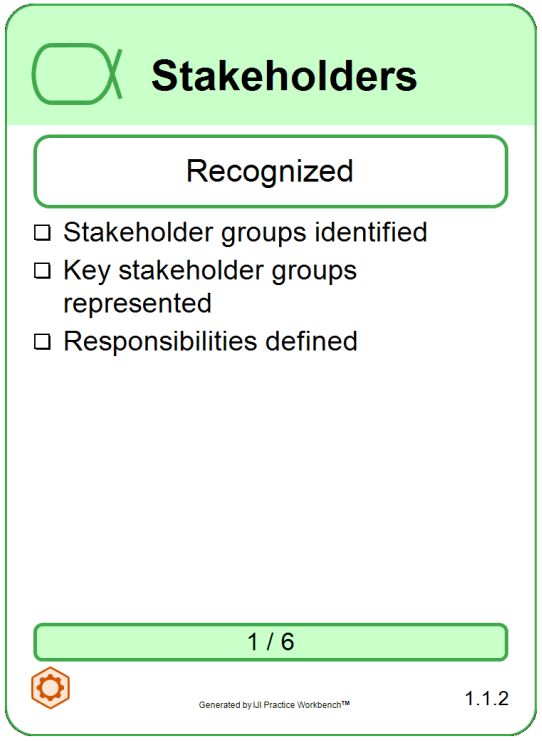
Team

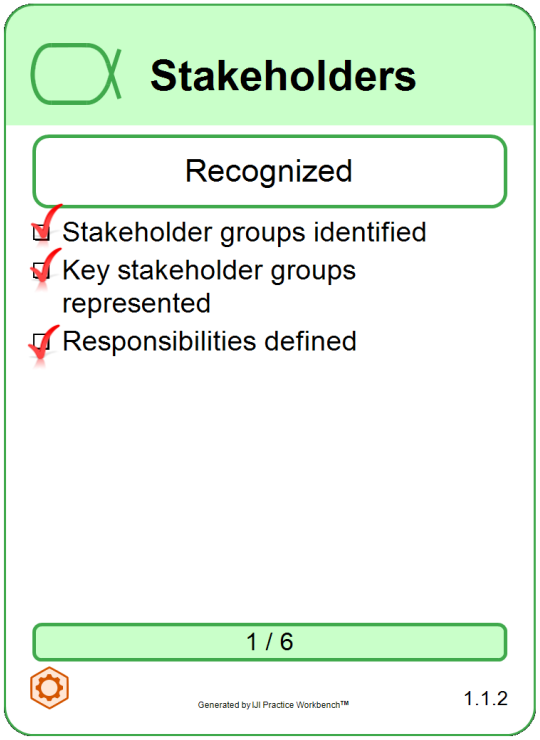
Way of Working

Work

Assessing Stakeholder state

- The first card for the Stakeholder alpha is discussed
- The team studies the first Stakeholder card (left) and agrees that all criteria are fulfilled, this is that state Recognized has been achieved

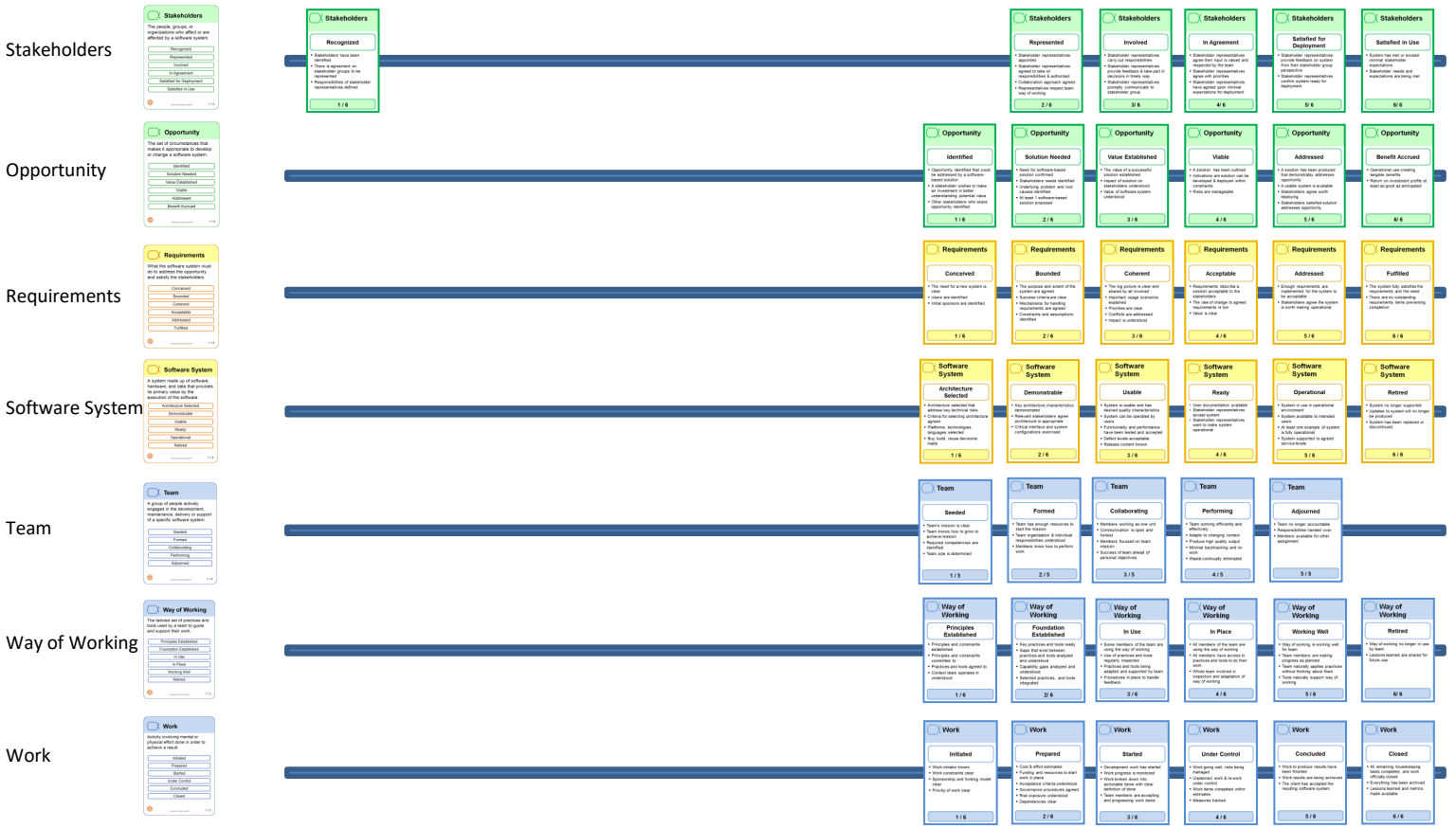




Chasing the State: Step 1

As a consequence that all items in the first state card checklist are marked DONE

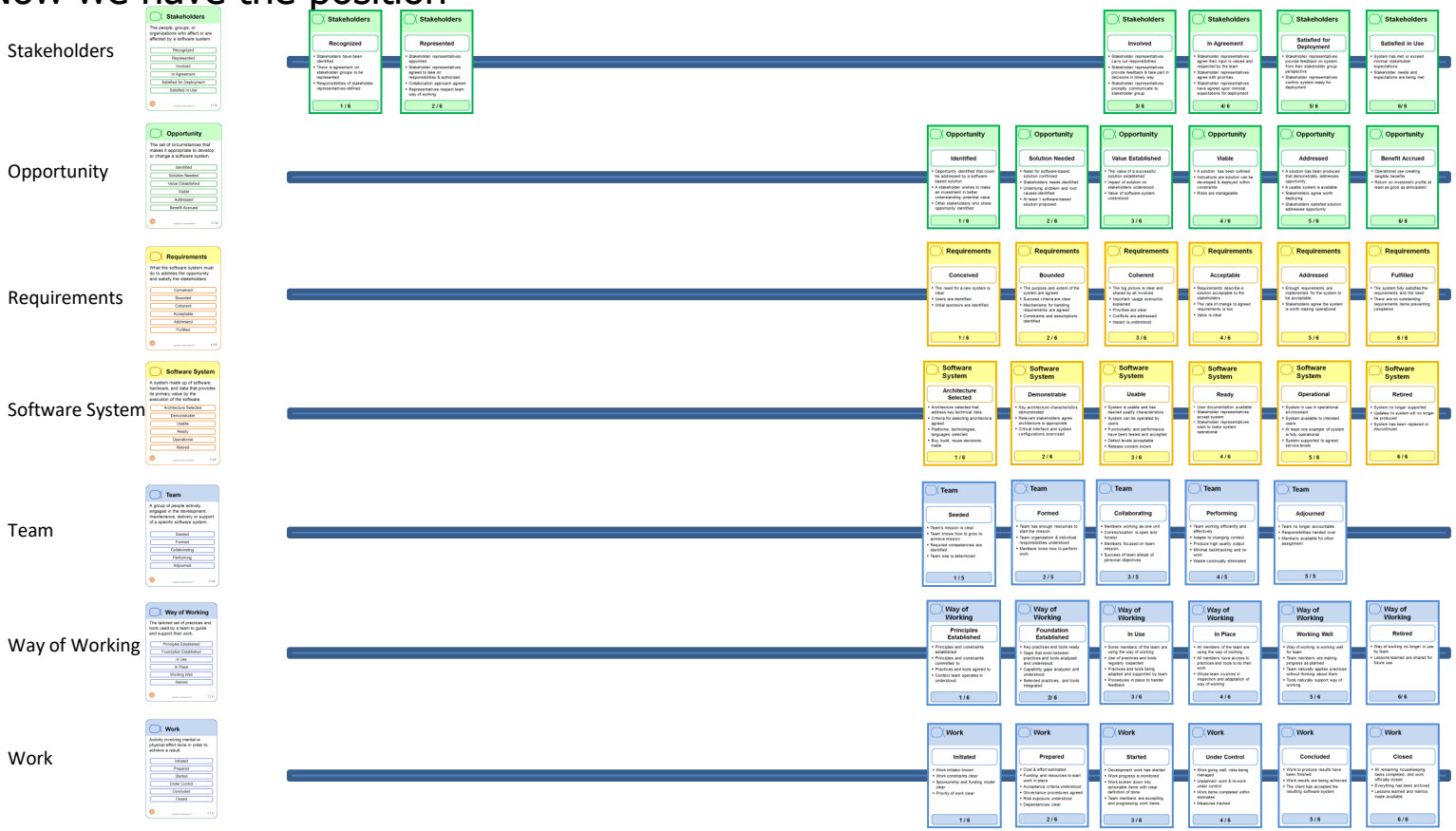
- that card is moved to the left on the table



Chasing the State: Steps 2 & 3

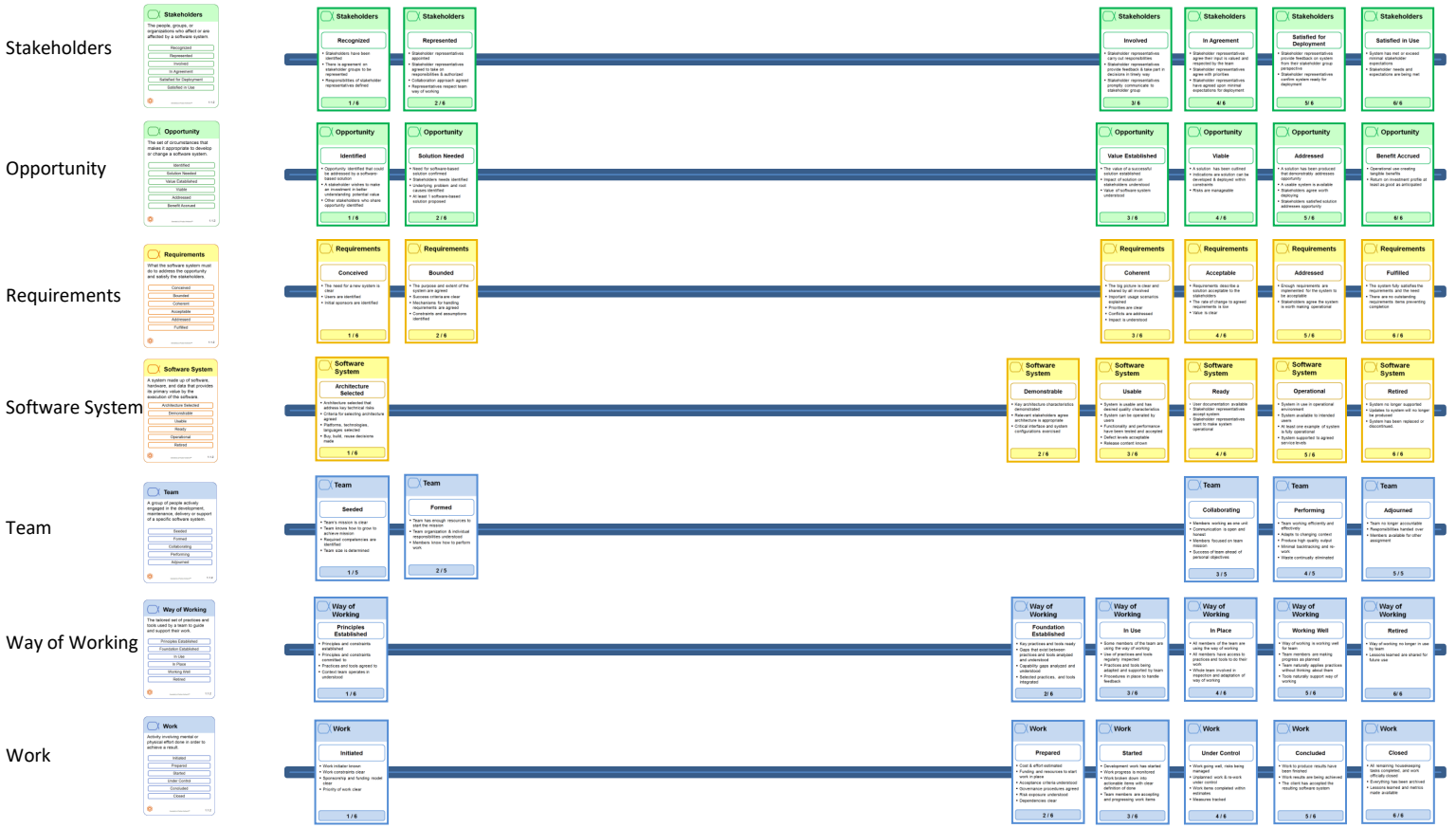
The game continues and the second Stakeholder state card is examined.

- The team agrees that this state has also been achieved
  - So that card is also moved to the left close to the first state card.
- Thus, the third state card is studied.
  - Here the team agrees that the criteria are not fulfilled so this card is not moved it stays where it is.
- Now we have the position



Chasing the State: … at Game Over

- The Chasing the State continues with the Opportunity alpha, the Requirements alpha, etc.
  - In this example we ended up in the situation shown below
- If the team can't easily agree on a specific alpha, they can play Progress Poker for the particular alpha that is not easy to agree upon



For Next Time

- Review Chapters 8, 9, 10
- Review this Lecture
- Read Chapters 11, 12
- Come to Lecture