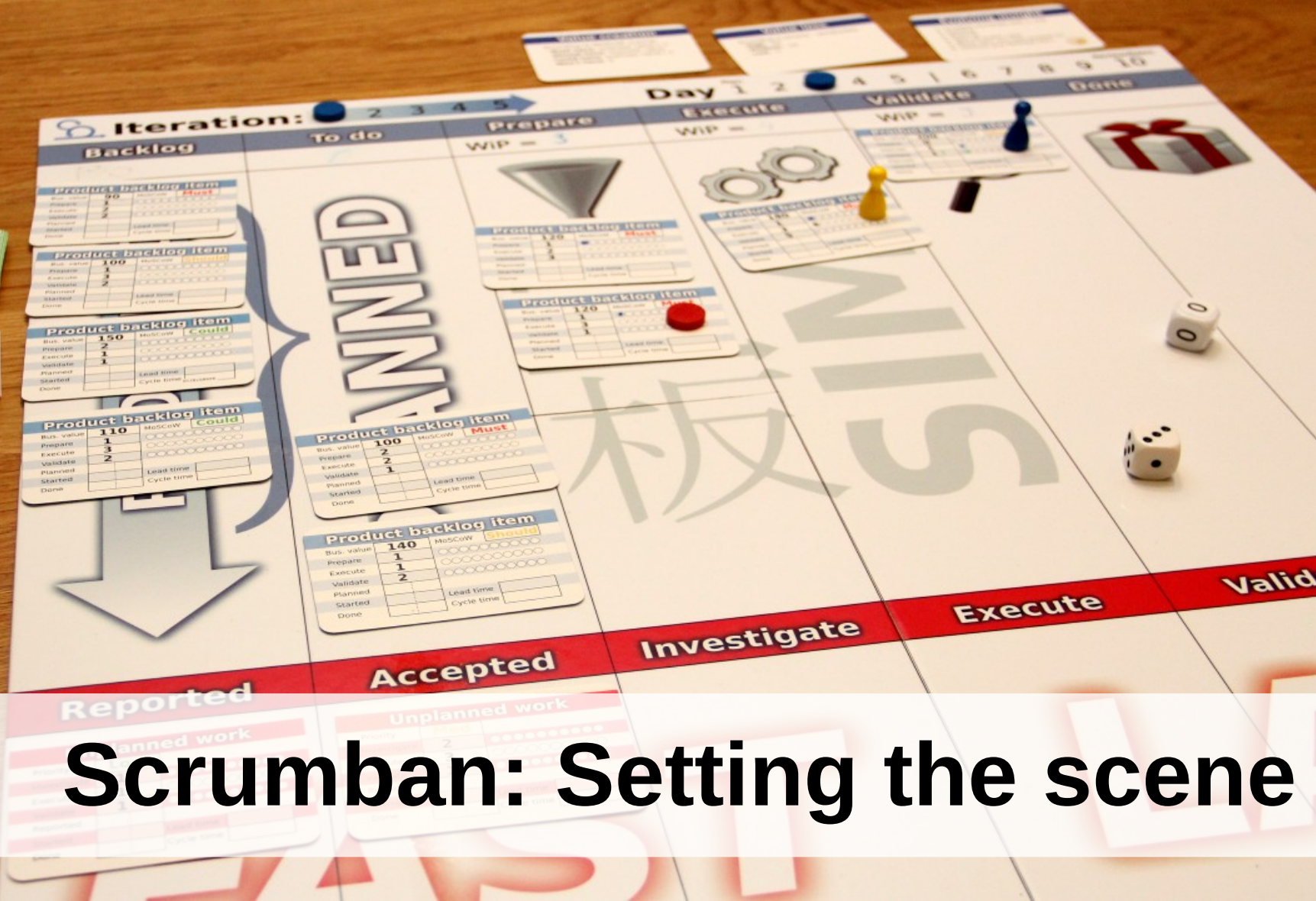


# SCRUMBAN SIMULATION

A safe way to learn how to deal with both planned and unplanned work in an iterative approach. (version 1.4.1)

Sangeetha Sridhar & Koen Vastmans – SimuLearn









# Why Scrumban?



Will open a YouTube video

# What is Scrumban?

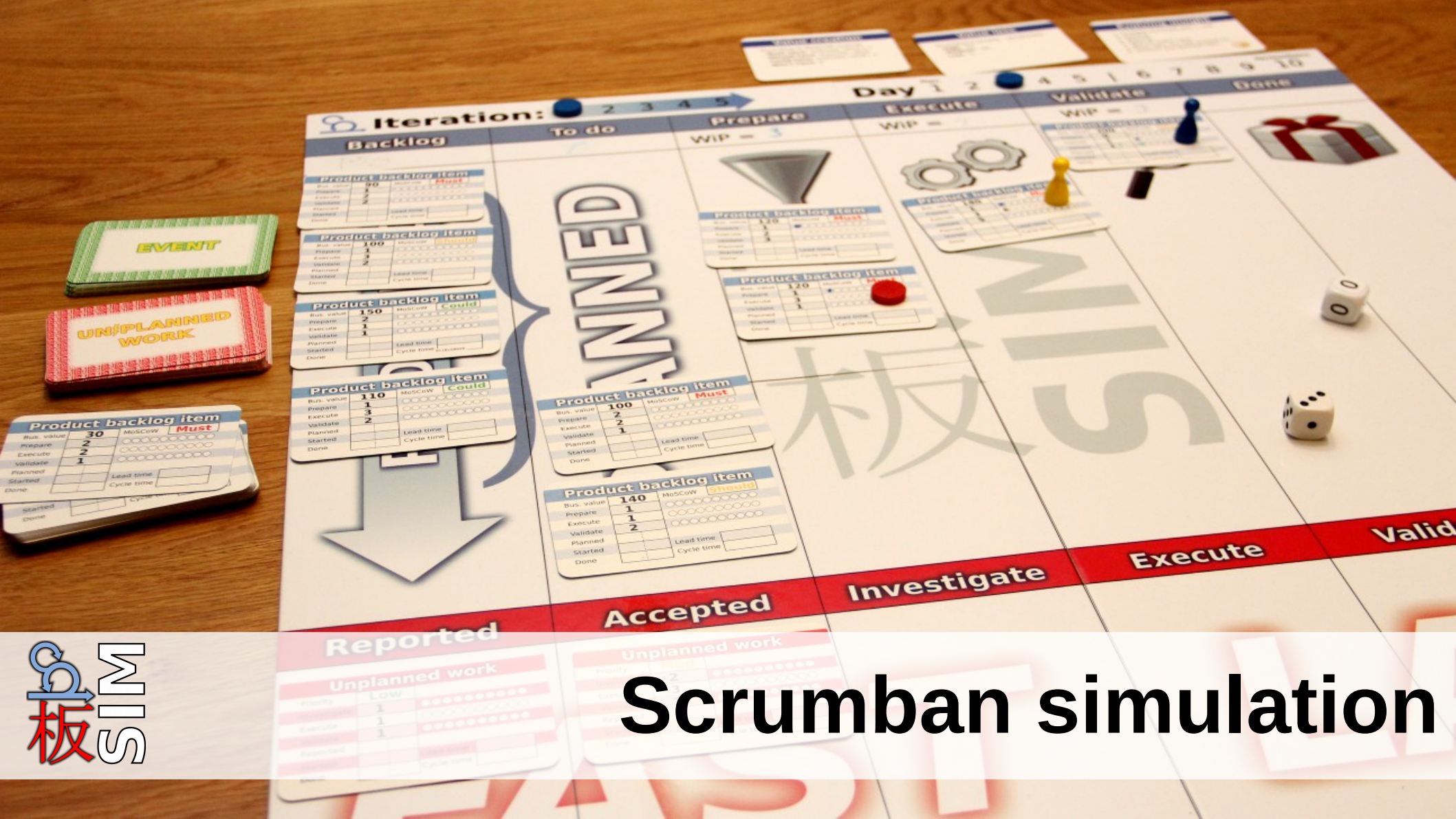


+

# 看板

- Iterations
- Scrum roles
- Scrum meetings \*
- Workflow
- Pull principle
- WiP limits





# Scrumban simulation

# Objective





## Product backlog item

Bus. value	<b>150</b>	MoSCoW	<b>Must</b>
Prepare	<b>3</b>	○○○○○○○○○○	
Execute	<b>4</b>	○○○○○○○○○○	
Validate	<b>2</b>	○○○○○○○○○○	
Planned			
Started		Lead time	
Done		Cycle time	

## Unplanned work

Priority	<b>High</b>	
Investigate	<b>1</b>	○○○○○○○○○○
Execute	<b>2</b>	○○○○○○○○○○
Validate	<b>2</b>	○○○○○○○○○○
Reported		
Started		Lead time
Done		Cycle time

## Event

You are ill.

You are absent for the rest of the week

## Scrum master super hero

It is part of your responsibility as Scrum master to remove impediments. This card makes you remove all blockers from all cards on the board, be it planned or unplanned work.

**You can only use this card once!**





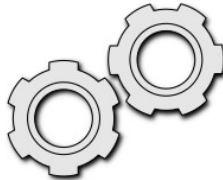




## Reported

### Unplanned work

Priority	<b>Low</b>	
Investigate	<b>1</b>	○○○○○○○○○○
Execute	<b>1</b>	○○○○○○○○○○
Validate	<b>1</b>	○○○○○○○○○○
Reported		
Started		Lead time
Done		Cycle time

# The board – planned work

 <b>Iteration:</b> 1 2 3 4 5						<b>Day</b> <div>             Plan             1 2 3 4 5   6 7 8 9 10             Review/Retro           </div>									
Backlog		To do		Prepare		Execute		Validate		Done					
				WiP =		WiP =		WiP =							
															





# The board – unplanned work

Reported	Accepted	Investigate	Execute	Validate	Done
FAST LANE					

Reported

Unplanned work

Priority	Low	●●●●●●●●
Investigate	1	○●●●●●●●
Execute	1	○●●●●●●●
Validate	1	○●●●●●●●
Reported		
Started		Lead time
Done		Cycle time

Accepted

Unplanned work

Priority	Med	●●●●●●●●
Investigate	2	○●●●●●●●
Execute	3	○●●●●●●●
Validate	1	○●●●●●●●
Reported		Lead time
Started		Cycle time
Done		







# 1. Preparation – Form a team

- Who will be the product owner?
- Who will be the Scrum master?  
(Limited responsibility in this simulation – super hero card)
- Divide roles:
  - Either separate roles per activity
  - Or combine 2 activities per role (e.g. prepare & validate)
- Roles determine your team capacity



# 1. Preparation – Team & roles

- People can take up tasks outside their specialty
- Efficiency penalty:
  - Within specialty: 2 units of work per day
  - Outside specialty: only 1 unit of work per day
- Scrum master & product owner can take up tasks
  - Half of their time
  - Only within their specialty



# 1. Preparation – WiP limits

- On activity level

Prepare	Execute	Validate
WiP =	WiP =	WiP =

- On individual level  
3 pawns per team member





# 1. Preparation – WiP limits



- Why 3 pawns?
- A pawn is like an avatar
- Assign yourself to a task
- But you can only do 2 units of work per day
  - At most 2 different backlog items
- Extra pawn for e.g. events





## 2. Prioritization

- Product owner decides priorities
- Puts the backlog items in the Backlog column
  - First set of most important items
  - Ordered by priority

PRIORITIZED

Product backlog item		
Bus. value	150	MoSCoW <b>Must</b>
Prepare	3	○○○○○○○○○○
Execute	4	○○○○○○○○○○
Validate	2	○○○○○○○○○○
Planned		
Lead time		
Cycle time		

Product backlog item		
Bus. value	100	MoSCoW <b>Should</b>
Prepare	1	○○○○○○○○○○
Execute	3	○○○○○○○○○○
Validate	2	○○○○○○○○○○
Planned		
Started		

Product backlog item		
Bus. value	60	MoSCoW <b>Could</b>
Prepare	2	○○○○○○○○○○
Execute	4	○○○○○○○○○○
Validate	1	○○○○○○○○○○
Planned		
Started		

Product backlog item		
Bus. value	20	MoSCoW <b>won't</b>
Prepare	1	○○○○○○○○○○
Execute	3	○○○○○○○○○○
Validate	1	○○○○○○○○○○
Planned		
Started		
Lead time		
Cycle time		



## 2. Prioritization – How?

- MoSCoW score:  
what is really important?
- Business value:  
what gives the highest benefit?
- Workload:  
what gives the fastest benefit?
- Combine criteria?

PRIORITIZED

Product backlog item			
Bus. value	150	MoSCoW	Must
Prepare	3	○○○○○○○○○○	
Execute	4	○○○○○○○○○○	
Validate	2	○○○○○○○○○○	
Planned		Lead time	
		Cycle time	

Product backlog item			
Bus. value	100	MoSCoW	Should
Prepare	1	○○○○○○○○○○	
Execute	3	○○○○○○○○○○	
Validate	2	○○○○○○○○○○	
Planned			
Started			

Product backlog item			
Bus. value	60	MoSCoW	Could
Prepare	2	○○○○○○○○○○	
Execute	4	○○○○○○○○○○	
Validate	1	○○○○○○○○○○	
Planned			
Started			

Product backlog item			
Bus. value	20	MoSCoW	won't
Prepare	1	○○○○○○○○○○	
Execute	3	○○○○○○○○○○	
Validate	1	○○○○○○○○○○	
Planned			
Started		Lead time	
Done		Cycle time	





## 2. Prioritization – MoSCoW?

- Must Have  
at most 60% of your backlog
- Should have
- Could have  
on average 20% of your backlog
- Won't have

PRIORITIZED

### Product backlog item

Bus. value	150	MoSCoW	Must
Prepare	3		
Execute	4		
Validate	2		
Planned			
Lead time			
Cycle time			

### Product backlog item

Bus. value	100	MoSCoW	Should
Prepare	1		
Execute	3		
Validate	2		
Planned			
Started			

### Product backlog item

Bus. value	60	MoSCoW	Could
Prepare	2		
Execute	4		
Validate	1		

### Product backlog item

Bus. value	20	MoSCoW	won't
Prepare	1		
Execute	3		
Validate	1		
Planned			
Started			
Lead time			
Cycle time			

# 3. Planning

- Team determines capacity for next iteration
- Forecasts which backlog items they can implement according to capacity
- Move selected backlog items to To do column
- Now let the work begin...



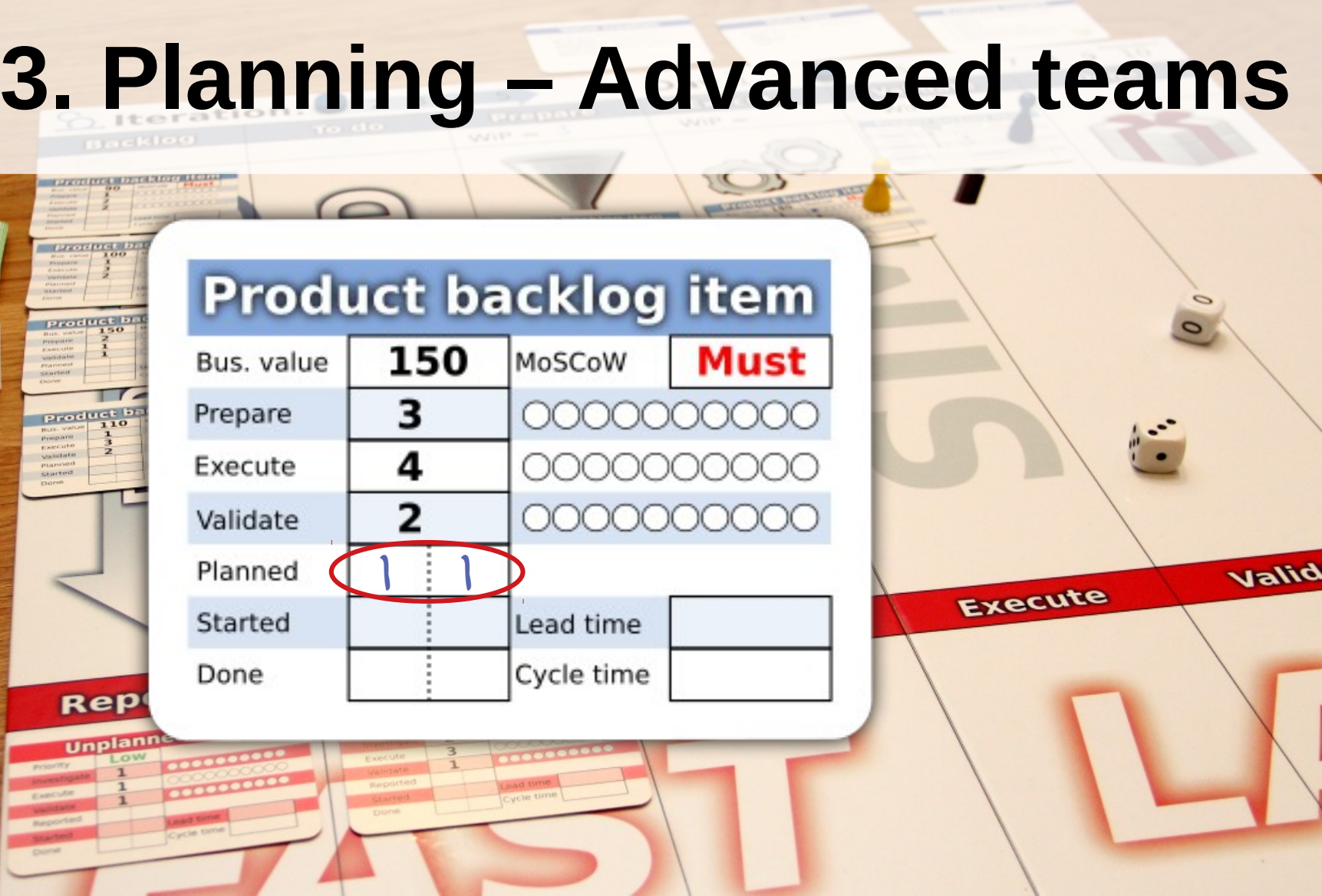


# 3. Planning – Capacity example

- Team of 4 members:
  - 2 combine prepare & validate
  - 2 only do execution
- First day =  $\frac{1}{2}$  capacity, 1 unit of work in specialty
- Last day =  $\frac{1}{2}$  capacity, **only unplanned work**
- 8 days full capacity
- = 17 days prepare & validate + 17 day execute work
- = 34 units of work prepare & validate + 34 execution work
- - margin for unplanned work + unforeseen events!

# 3. Planning – Advanced teams

Product backlog item			
Bus. value	150	MoSCoW	Must
Prepare	3	○○○○○○○○○○○○	
Execute	4	○○○○○○○○○○○○	
Validate	2	○○○○○○○○○○○○	
Planned	1   1		
Started		Lead time	
Done		Cycle time	







# 4. Start working – first day

**Day** Plan 1 2 3 4 5 | 6 7 8 9 10 Review/Retro

Only half a day of work




# 4. Start working

To do	Prepare																																																																																																																
	WiP =																																																																																																																
<div><div>Product backlog item</div><table><tr><td>Bus. value</td><td>150</td><td>MoSCoW</td><td></td></tr><tr><td>Prepare</td><td>3</td><td></td><td></td></tr><tr><td>Execute</td><td>4</td><td></td><td></td></tr><tr><td>Validate</td><td>2</td><td></td><td></td></tr><tr><td>Planned</td><td></td><td></td><td></td></tr><tr><td>Started</td><td></td><td></td><td></td></tr><tr><td>Done</td><td></td><td></td><td></td></tr></table></div>	Bus. value	150	MoSCoW		Prepare	3			Execute	4			Validate	2			Planned				Started				Done				<div><div>Product backlog item</div><table><tr><td>Bus. value</td><td>150</td><td>MoSCoW</td><td><b>Must</b></td></tr><tr><td>Prepare</td><td>3</td><td></td><td></td></tr><tr><td>Execute</td><td>4</td><td></td><td></td></tr><tr><td>Validate</td><td>2</td><td></td><td></td></tr><tr><td>Planned</td><td></td><td></td><td></td></tr><tr><td>Started</td><td></td><td></td><td></td></tr><tr><td>Done</td><td></td><td></td><td></td></tr></table></div> <div><div>Product backlog item</div><table><tr><td>Bus. value</td><td>100</td><td>MoSCoW</td><td><b>Should</b></td></tr><tr><td>Prepare</td><td>1</td><td></td><td></td></tr><tr><td>Execute</td><td>3</td><td></td><td></td></tr><tr><td>Validate</td><td>2</td><td></td><td></td></tr><tr><td>Planned</td><td></td><td></td><td></td></tr><tr><td>Started</td><td></td><td></td><td></td></tr><tr><td>Done</td><td></td><td></td><td></td></tr></table></div> <div><div>Product backlog item</div><table><tr><td>Bus. value</td><td></td><td>MoSCoW</td><td><b>Could</b></td></tr><tr><td>Prepare</td><td></td><td></td><td></td></tr><tr><td>Execute</td><td></td><td></td><td></td></tr><tr><td>Validate</td><td></td><td></td><td></td></tr><tr><td>Planned</td><td></td><td></td><td></td></tr><tr><td>Started</td><td></td><td></td><td></td></tr><tr><td>Done</td><td></td><td></td><td></td></tr></table></div>	Bus. value	150	MoSCoW	<b>Must</b>	Prepare	3			Execute	4			Validate	2			Planned				Started				Done				Bus. value	100	MoSCoW	<b>Should</b>	Prepare	1			Execute	3			Validate	2			Planned				Started				Done				Bus. value		MoSCoW	<b>Could</b>	Prepare				Execute				Validate				Planned				Started				Done			
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# 4. Start working

**Product backlog item**

Bus. value	150	MoSCoW	<b>Must</b>
Prepare	3	 ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	
Execute	4	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	
Validate	2	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	
Planned	1   1		
Started		Lead time	
Done		Cycle time	

**EVENT**

**UNPLANNED WORK**

**Product backlog item**

Bus. value: 30, MoSCoW: **Must**

Prepare: 1, Execute: 1, Validate: 1, Planned: 1, Started: 1, Done: 1

Lead time: , Cycle time:

**Unplanned work**

Priority: **Low**

Investigate: 1, Execute: 1, Validate: 1, Reported: 1, Started: 1, Done: 1

Lead time: , Cycle time:

**Execute** **Valid**

**FAST**

# 4. Start working

Product backlog item			
Bus. value	150	MoSCoW	<b>Must</b>
Prepare	3	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Execute	4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Validate	2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Planned	1	1	
Started			Lead time
Done			Cycle time

EVENT

UNPLANNED WORK

Product backlog item  
 Bus. value: 30, MoSCoW: Must  
 Prepare: 1, Execute: 1, Validate: 1  
 Planned: 1, Started: 1, Done: 1  
 Lead time: , Cycle time:

Unplanned work  
 Priority: Low  
 Investigate: 1, Execute: 1, Validate: 1  
 Reported: 1, Started: 1, Done: 1  
 Lead time: , Cycle time:

Investigate: 2, Execute: 3, Validate: 1  
 Reported: 1, Started: 1, Done: 1  
 Lead time: , Cycle time:


Execute      Valid

FAST



# 4. Start working Advanced teams

## Product backlog item

Bus. value	150	MoSCoW	Must
Prepare	3	 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Execute	4	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Validate	2	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	
Planned	1   1		
Started	1   1	Lead time	
Done		Cycle time	



## 4. When an activity is done...

- You can remove your pawn
- Don't push items to the next stage
  - Pull the work
- Don't validate yourself what you implemented
  - Four eyes principle



# 5. Play in rounds





# 5. After each participant's round


- Evolving insight - role the normal die
- 1: increase workload with 1 unit
- 2: no action
- 3: no action
- 4: take an event card
- 5: block item you last worked on
- 6: unblock any blocked item







# In case of blocked items

- Role the special die 
- Determine whether the team can solve the impediment themselves
  - 0: the impediment is caused outside the team  
You have 0 impact to unblock it
  - 1 or 2: the units of work someone else of the team needs to spend to helps you to resolve the impediment






## 5. Why evolving insight?

- Something can take longer than expected
- You cannot finish an item without help from a colleague
- You may need to wait for someone/something (a decision?) outside the team
- Or the opposite – something got clarified
- Something unforeseen can just happen (events)



# 5. Increase workload

Product backlog item			
Bus. value	150	MoSCoW	Must
Prepare	3		
Execute	4		
Validate	2		
Planned	1   1		
Started	1   1	Lead time	
Done		Cycle time	


# 5. Blocked item help needed

Product backlog item			
Bus. value	150	MoSCoW	Must
Prepare	3	○○○○○○○○	
Execute	4	○○○○○○○○○○	
Validate	2	○○○○○○○○○○○○	
Planned	1   1		
Started	1   1	Lead time	
Done		Cycle time	





# 5. Blocked item external circumstances

Product backlog item			
Bus. value	150	MoSCoW	Must
Prepare	3	 ○○○○○○	
Execute	4	○○○○○○○○○○	
Validate	2	○○○○○○○○○○	
Planned	1   1		
Started	1   1	Lead time	
Done		Cycle time	



# 5. Too many blocked items?

## Scrum master super hero


It is part of your responsibility as Scrum master to remove impediments. This card makes you remove all blockers from all cards on the board, be it planned or unplanned work.

**You can only use this card once!**

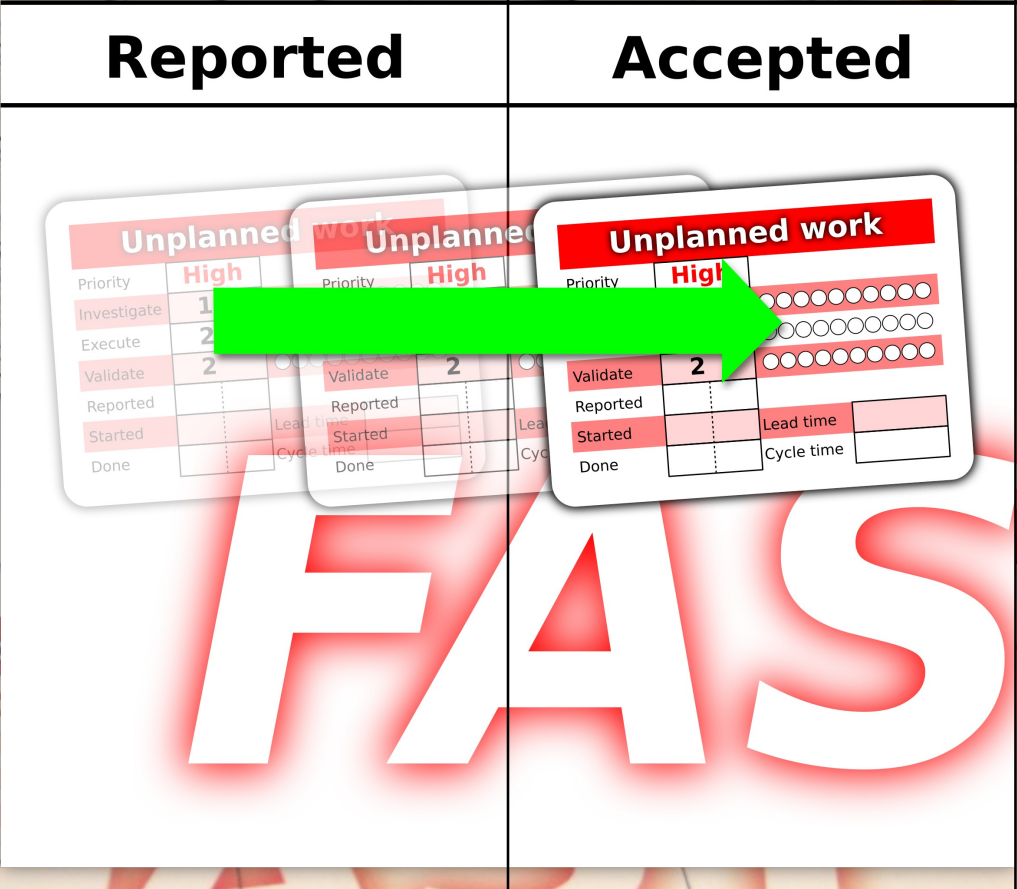




## 6. End of day

- Role the special die 
  - 0: lucky you – no unplanned work
  - 1: take 1 unplanned work card
  - 2: take 2 unplanned work cards
- Product owner decides what to do
  - Act immediately, plan or park  
**Except** for high priority work → Act immediately!

# 6. Accepting unplanned work







# 6. Unplanned work Advanced teams

Unplanned work			
Priority	High		
Investigate	1	●●●●●●●●●●	
Execute	2	○○○○○○○○○○○○	
Validate	2	●●●●●●●●●●	
Reported	1 3		
Started		Lead time	
Done		Cycle time	



## 6. End of day

- Calculate value created/lost
  - Backlog item done: calculate value
  - Unfinished unplanned work: calculate penalty



# 6. Create value

## Product backlog item

Bus. value	<b>150</b>	MoSCoW	<b>Must</b>
Prepare	<b>3</b>	○○○○○○○○○○○○	
Execute	<b>4</b>	○○○○○○○○○○○○	
Validate	<b>2</b>	○○○○○○○○○○○○	
Planned			
Started		Lead time	
Done		Cycle time	

Business value x multiplier:  
 Must have: business value x 2  
 Should have: business value x 1  
 Could have: business value x 0,5  
 Won't have: business value = 0

# 6. Loose value

Penalty per day for not finishing  
unplanned work:

- 1 for low priority
- 10 for medium priority
- 50 for high priority

## Unplanned work

**High**

Investigate

**1**

○○○○○○○○○○○○○○○○

Execute

**2**

○○○○○○○○○○○○○○○○

Validate

**2**

○○○○○○○○○○○○○○○○

Reported

Started

Done

Lead time

Cycle time

## Reported

### Unplanned work

Priority	Low	○○○○○○○○○○○○○○○○
Investigate	1	○○○○○○○○○○○○○○○○
Execute	1	○○○○○○○○○○○○○○○○
Validate	1	○○○○○○○○○○○○○○○○
Reported		
Started		
Done		
	Lead time	
	Cycle time	





# Value creation

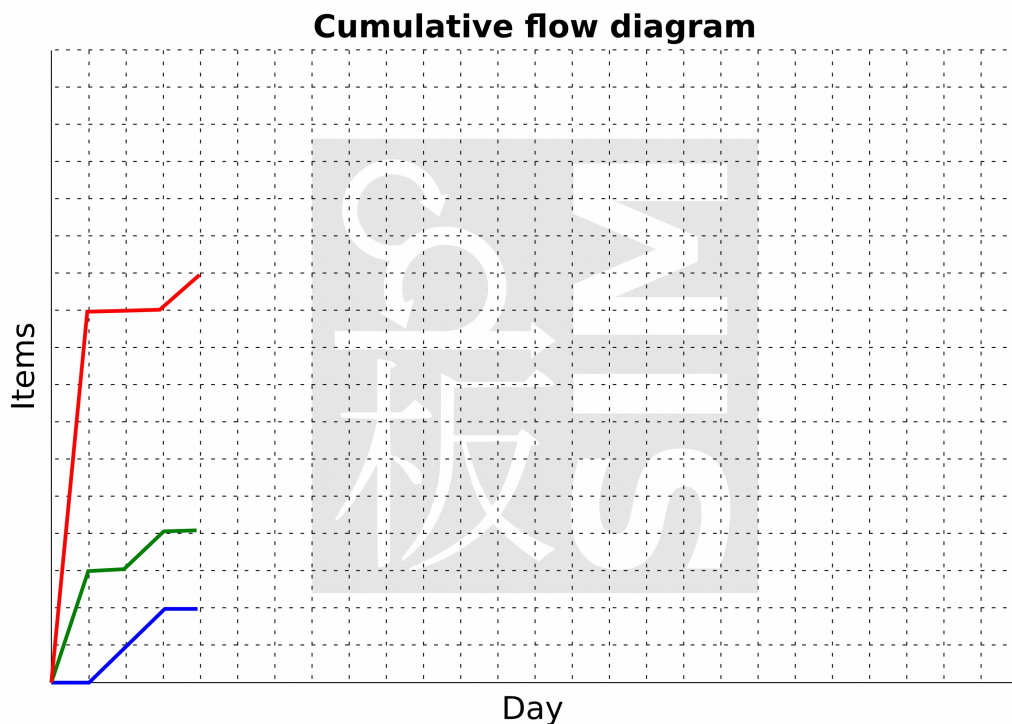
Team name: .....

	Iteration 1	Iteration 2	Iteration 3	Iteration 4	Iteration 5
Day 1					
Day 2					
Day 3					
Day 4					
Day 5					
Day 6					



# 6. End of day Advanced teams

- Update cumulative flow diagram






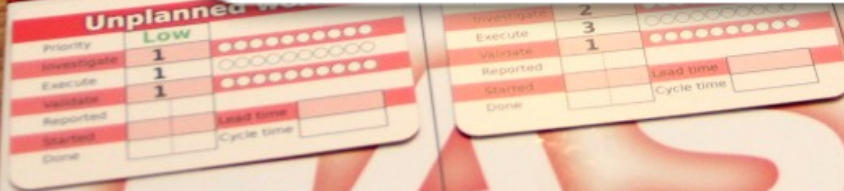
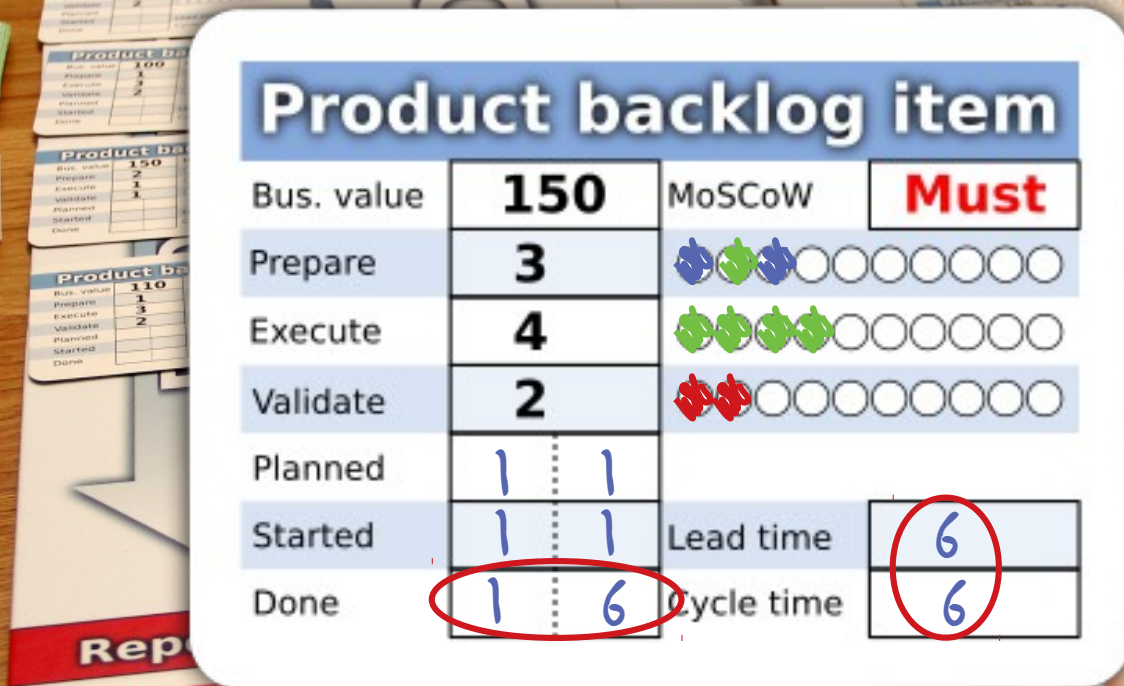




# 7. Item done – advanced teams

## Product backlog item

Bus. value	150	MoSCoW	Must
Prepare	3		
Execute	4		
Validate	2		
Planned	1	1	
Started	1	1	Lead time
Done	1	6	Cycle time





# 8. Last day of the iteration

Plan  
**Day** 1 2 3 4 5 | 6 7 8 9 **10** Review/Retro

Only half a day of work  
Only unplanned work





## 9. At the end of the iteration

- Retrospective
  - Planned versus done
  - Flow?
  - Unplanned work – right decisions?
  - WiP limits respected?
  - Metrics?

# Enjoy the simulation!

**Reported**

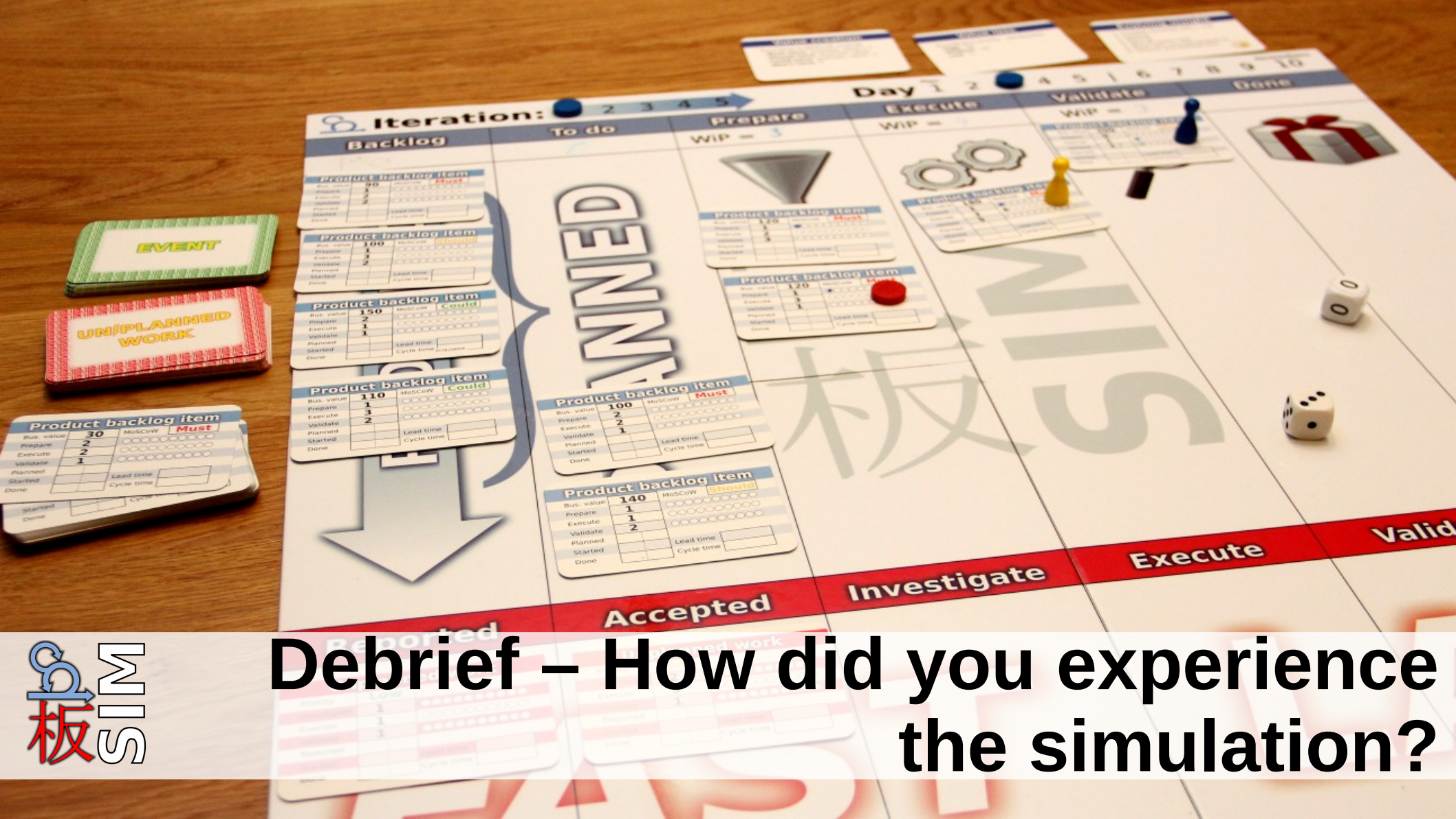
**Accepted**

Investigate

**Execute**

Valid





**Debrief – How did you experience the simulation?**

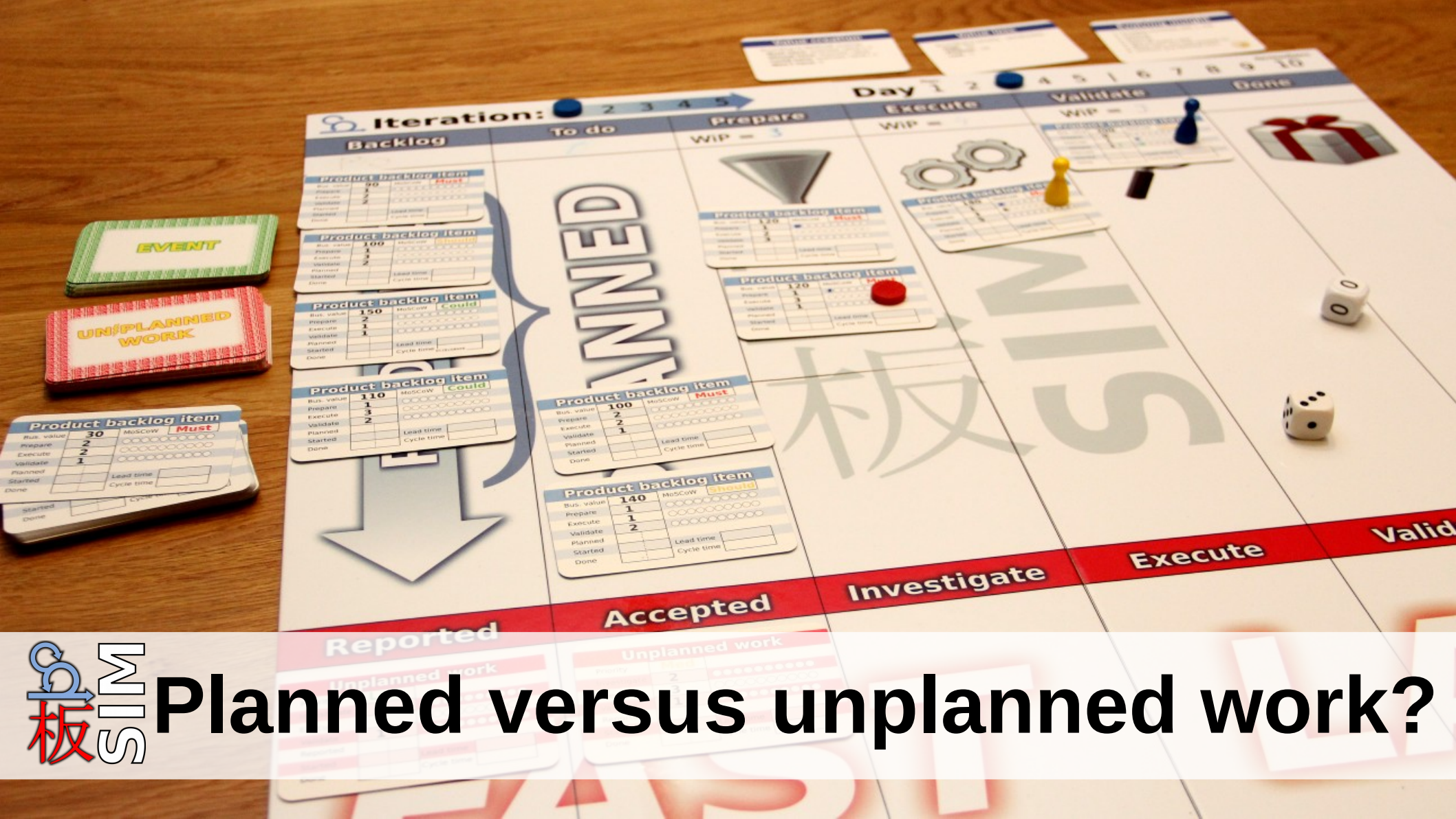






What did you learn?

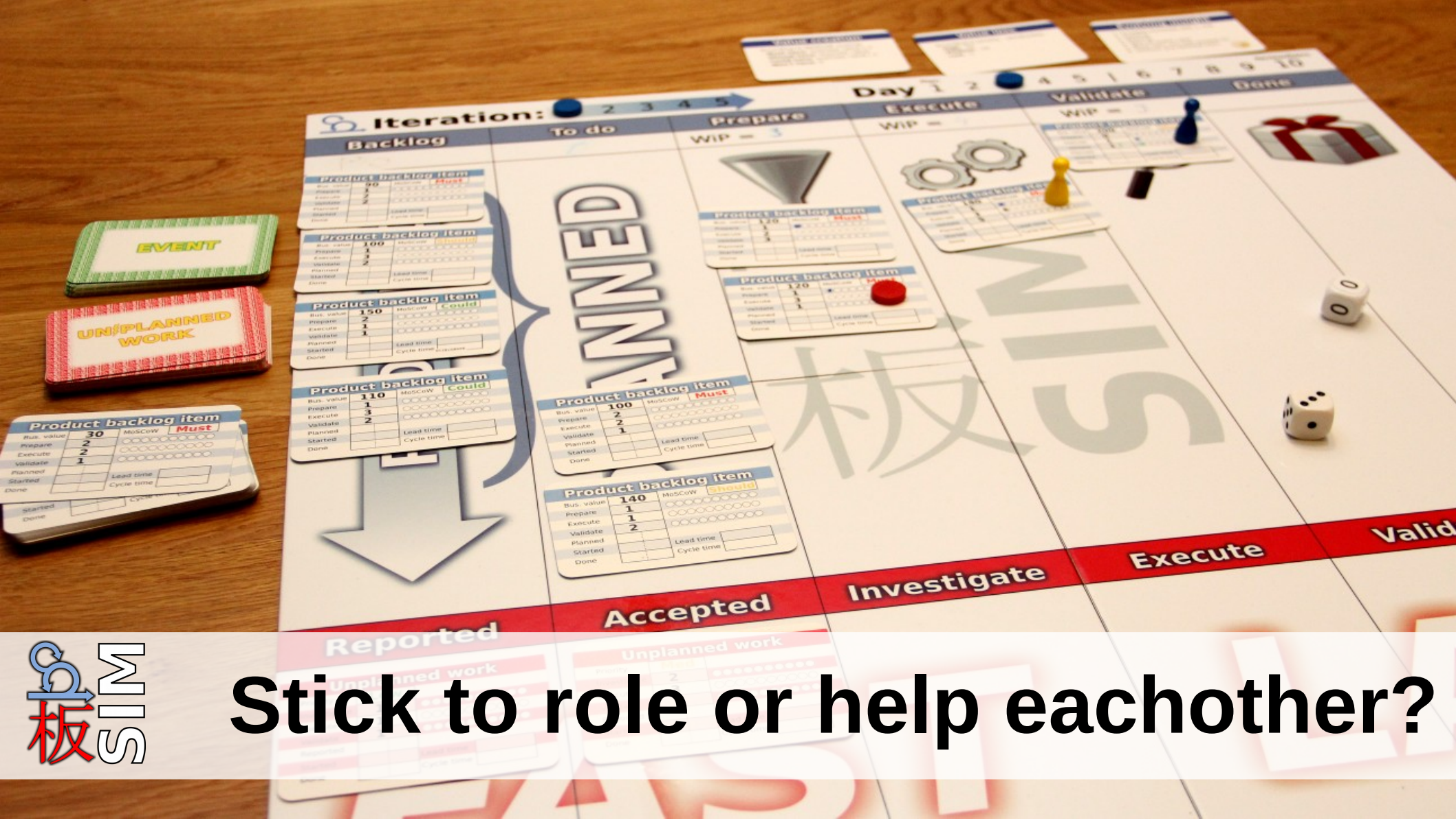




Planned versus unplanned work?



# Stick to role or help each other?







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