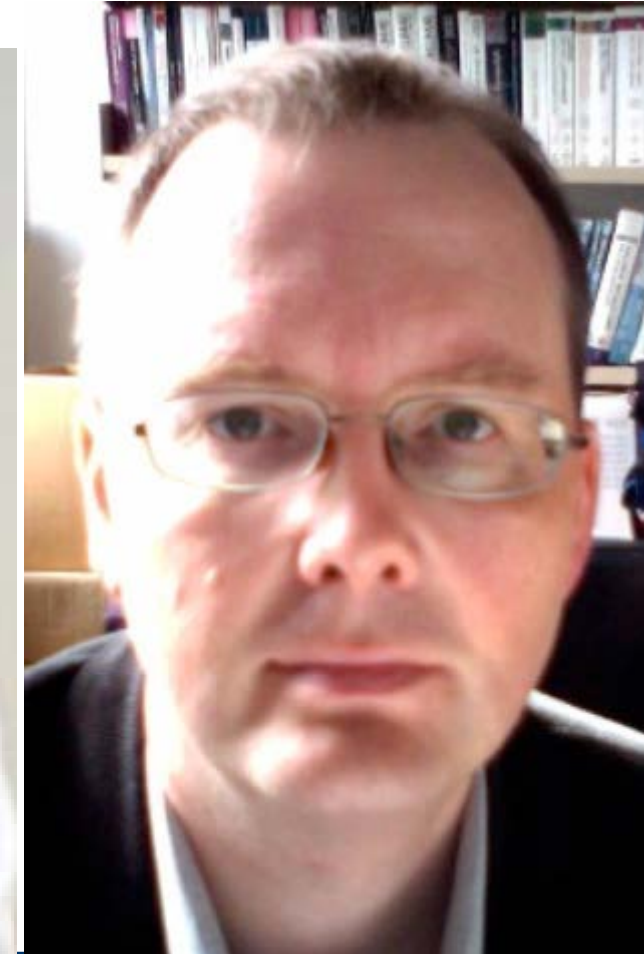


Becoming Agile: A Grounded Theory of Agile Transitions in Practice

- "Agile" means being able to adapt to changing requirements
 - including requirements that are understood only step-by-step
- Principles:
 - Iterative, incremental development style
 - to keep complexity in check.
 - Focus on simplicity
 - Have a working product early, then extend *and modify* it.
 - Short planning horizon
 - because long-term plans rarely work
 - Reliance on developers' technical skills and good judgment
- Reliance on team self-organization
 - and developer motivation.
 - Most communication is spoken, not written.
- Collaborate closely with requirements owners
 - to understand requirements and set priorities.
 - Focus on value.
- Reflect on your own work and improve your work style
 - team, individual

- Rashina Hoda, James Noble:
"[Becoming Agile: A Grounded Theory of Agile Transitions in Practice](#)",
Int'l. Conf. on Software Engineering 2017,
ACM Press



- Goal:
 - Explain what the transition involves from conventional to agile SW development and management methods
- Method:
 - A Grounded Theory (GT) study
 - Data: Hour-long interviews with 31 practitioners
 - from 18 teams from 5 countries
 - Analysis:
 - open coding
 - codes, concepts, categories
 - constant comparison

- Coding example:

Raw data: *“I think it [self-organization] is fifty-fifty. So my personal default position with my team is to try and allow them to self-organize but there is a need for me right now to monitor those activities that they don’t revert to practices that are compulsive. So my team is still transitioning...”*

Key Point: *encouraging empowerment but monitoring during transitioning*

Code: *encouraging empowerment (transitioning)*

Code: *monitoring teams (transitioning)*

Participant demographics



P#	Role	Domain	TX	AX	OS	TS	CN	MD
P1	BA	Marketing	6	2	XL	6	USA	S
P2	PM	Business	10	6	M	8	NZ	S/K
P3	Dev	Health	2	2	XS	5	PGL	S/XP
P4	BA	Banking	9	3	L	10	USA	S/XP
P5	S. Dev	Business	4	3.5	M	8	NZ	S/K
P6	Dev	Health	3	1	L	6	IND	S
P7	QA	Banking	6	2	L	6	IND	S
P8	PM	Business	14	1	L	7	USA	S
P9	S. Dev	Banking	5	3	L	8	OZ	S/XP
P10	SM	Utilities	8	2.5	M	7	NZ	S/K

P#: participant number; Dev: developer, PM: project manager, SM: scrum master, QA: quality analyst, **BA**: business analyst, **ERP**: enterprise support; **TX**: total experience (in years); **AX**: agile experience (in years); **OS**: organizational size (XS<100; S<1K; M<5K; 100K<L<10K; XL>100K) **TS**: team size; CN: country (PGL=Portugal; OZ= Australia; IND=India); **MD**: method (S=Scrum; K=Kanban; L=Lean, M=Mixed Methods.)

GT: Emergence of categories (Example)



Result: The 5 dimensions of becoming agile

The transition to fully agile teams requires change in many respects. These can be sorted into five dimensions:

- 1. Development practices**
- 2. Team practices**
- 3. Management approach** (see the example above)
- 4. Reflective practice**
- 5. Culture**

"Dimension" means there is little fixed coupling!



- *“Obviously challenges are there and I can say people are resistant to changes [...] for example not everybody is willing to attend the meetings often [...] so it takes a while for them, for the rhythm to set [...] At the initial stages it is difficult but as time passes it gets easier.”*
P15, ERP, India
- *“Transition happens slowly. Initially they don’t understand anything, sprint planning, demo, if demo [is] required? How would I point [estimate] the story? What will happen if I put 3 [points]? We need to explain [to] them. Initially learning, then we start applying.”*
P25, Tech Lead, India



- **Manager-driven:**
"We really don't feel that we get delegated [tasks], but we feel one less job."
P13, Project Manager, India
- **Assisted:**
"[Task assignment] is a bit of both. Like sometimes "Hey, [tech lead] could you look into that" and sometimes we go forward check it and decide how to split them up [...] People are starting to take their responsibilities..."
P5, Senior Developer, New Zealand
- **Team-driven:**
"We don't wait for [the team leads] [...] We directly contact the client if they are online [...] I think we are now used to it."
P30, Senior Developer, India



- **Driving:**

"[The manager] is the first point of the contact between [the team] and the stake-holders."

P6, Software Engineer, India

"As we are the [pilot team] for agile [methods] we tend to get motivated a lot from the managers."

P13, Project Manager, India

- **Adapting:**

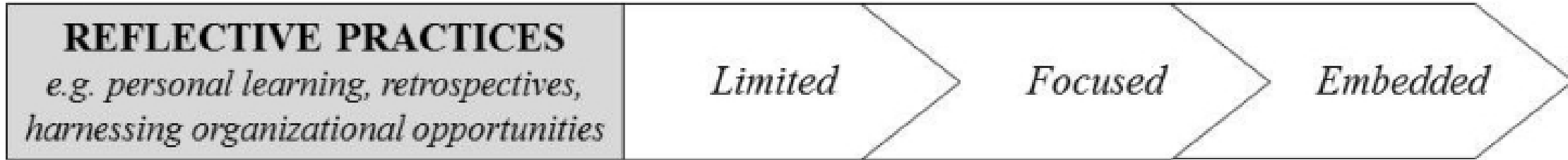
"My team is very easily distracted [...] I have to sometimes revert to classic [...] command and control mode."

P2, Project Mgr., New Zealand

- **Empowering:**

"I do not interfere in the relationship between my team members and the clients as I don't want to jeopardize the communication between them."

P10, Scrum Master, New Zealand



- **Limited:**

"We also had times where a whole team lacks in one specific area [...] It is not a big deal as we had to go through training sessions [...] but the problem is time consumption."

P13, Project Manager, India

- **Focused:**

"We are now working on process improvements. Previously we did not have planning poker, but we introduced it."

P25, Senior Developer, India

- **Embedded:**

"We have hired an experienced scrum expert to overlook the process. After every release, we try to see what went wrong and what went right and make changes in the next release to avoid issues."

P16, Senior Developer, USA



- **Hierarchical:**

"if we are unable to deliver [on time] we will document the reason [...] After getting the approval from the managers we will follow up the same to the product owner who in turn provides necessary explanation to the clients."

P6, Developer, India

- **Evolving:**

(in between, mixed, or alternating)

- **Open:**

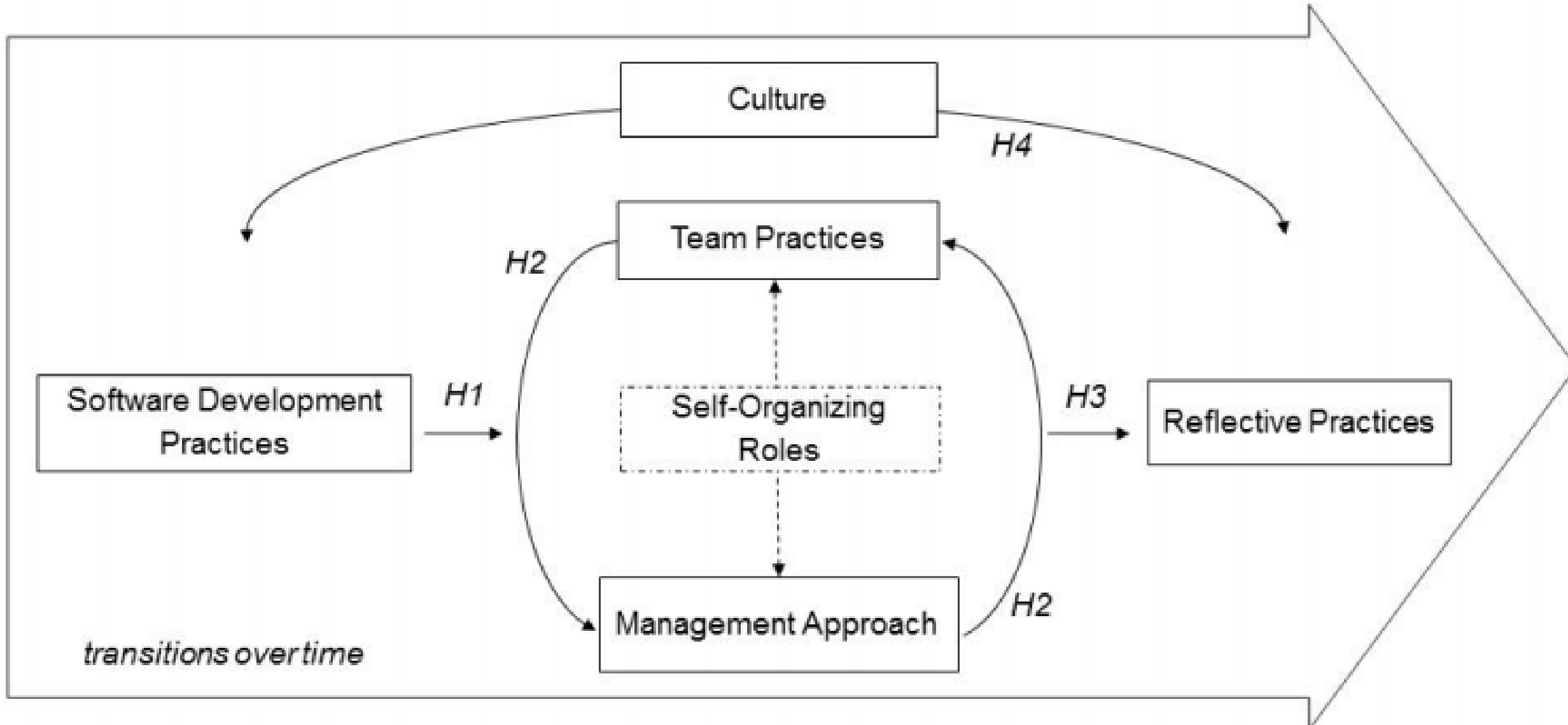
"Also there is no defined communications hierarchy or process defined."

P16, Senior Developer, USA

"So we can decide whether we can make this addition or to reject it [...] This is not done by any external influence but it is purely us."

P7, Tester, India

The resulting Grounded Theory



The resulting Grounded Theory (2)

P = Practice

T = Transition

- **H1:** Development P T is necessary but not sufficient for team P T and management P T.
- **H2:** Team P T and management P T reflect (and adapt to) each other
- **H3:** Team P T and management P T are necessary but not sufficient for reflective P T.

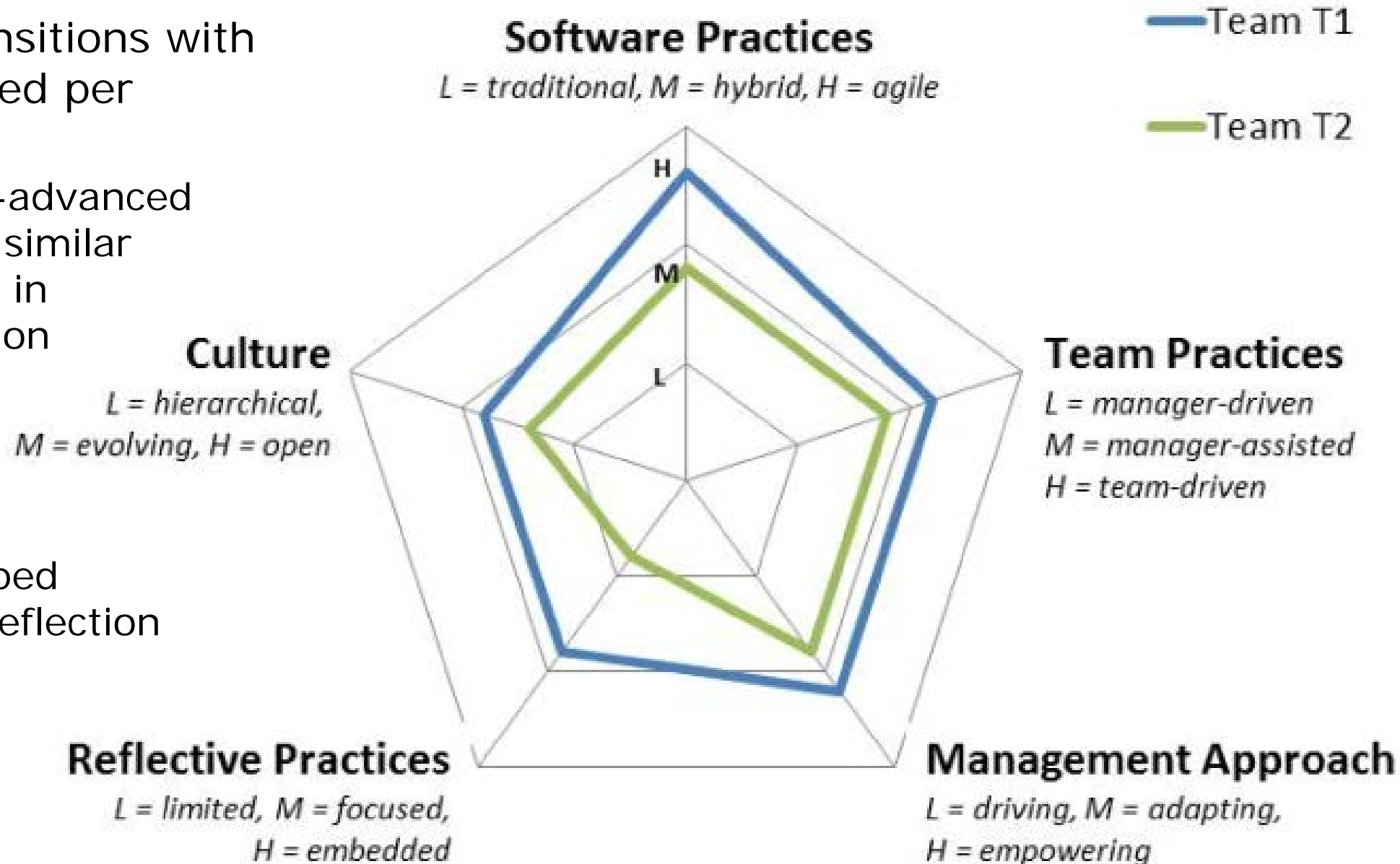
- **H4:** All changes are influenced by
 - organizational culture,
 - team culture,
 - individual culture, and
 - their interactions.

Open culture supports the other four dimensions.

Dimensions develop with different speeds

- Each team transitions with a different speed per dimension

- The medium-advanced team T1 has similar development in each dimension
- The nearly medium-advanced team T2 has underdeveloped culture and reflection



1. Why is agile transition such a difficult-to-understand phenomenon?
 - Because it happens in a 5-dimensional space, not a 1-dimensional one
 2. Software development practices are only the beginning
 - They can indicate non-agility, but not agility.
 3. Watch out for being stuck in a hierarchical culture!
- *"We hypothesize that teams will be able to use the model to assess their progress across the five dimensions, and thus to guide and monitor their ongoing agile transitions."*



1. Interviews do not reflect reality, only perceptions of reality
2. The study does not observe transitions
 - only single snapshots in time.
 - So the transition states could in fact be static team properties.
3. "Dimensions" should be independent/orthogonal. These are related
 - so the term is misleading.
4. Some levels of some dimensions appear a bit far-fetched given the quotes that (should) support them.
5. The difference between Management Approach and Culture is unclear

Thank you!