

How agile architecture can be applied in large- scale agile environments –

Part 4: How can architecture decisions be reached quickly and efficiently?



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Organising agile architecture decision processes

After improving the architecture organisation and the lean-agile working processes across Architects, teams and management, Peter now wants to look more closely at what else might have caused the development teams inability to deliver their increments as planned. Peter talks to one of the Scrum Masters of the Butterfly Programme, Henry, in order to understand which impediments cropped up that slowed down the teams' overall delivery velocity. In this conversation, Peter learns that the teams have been impeded by two factors when decisions have to be taken. Firstly, the teams have to wait with their developments when they depend on vital decisions from the programme's Architecture Board which includes key management stakeholders. The monthly cadence of the Board meetings has contributed to this delay. Secondly, some teams make decisions on their own to keep the pace up, but do not coordinate with other teams and thus sometimes fail to notice their impact on others. In the worst case, this results in lengthy troubleshooting and rework.

This feedback puzzles Peter. But Henry goes on to explain that the decisions of the Board are not even communicated to all teams, as they are neither documented transparently enough nor accessible to all. This causes Peter to worry and he wonders how he can speed up the decisions

relevant to architecture and their transparency for the teams.

A first measure that Peter takes is to increase the frequency of the Architecture Board meetings from every four to every two weeks. This way, the teams will no longer have to wait so long for the Board's decisions.

But this is not enough to improve the decision-making process. Peter had read on the SAFe website that decisions should be made as close as possible to where the actual work happens, meaning closely to the development teams. Only decisions with cross-team impact or which are very hard to reverse later on should be made by committees.

But how can the teams know which decisions they can take on their own and which require formal approval? The next day, he discusses the topic with Hanna, the consultant Peter is working with. Hanna is not particularly surprised by Peter's concerns. She had already encountered this problem in a previous project. Hanna explains that it was helpful to define guardrails that will guide teams as to whether or not involve the Architecture Board. In her case, four characteristics were used to direct decision-making¹:

¹ https://pubs.opengroup.org/architecture/o-aaf/snapshot/Agile_Architecture_Framework.html#_heuristics_for_structuring_architecture_decisions

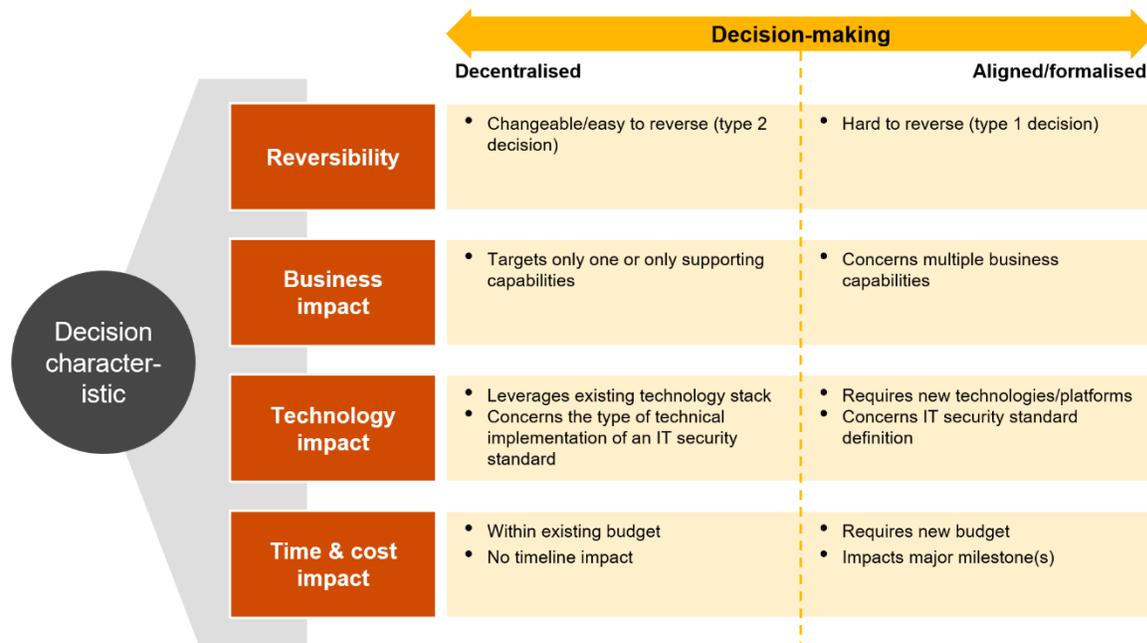


Figure 1: Decision characteristic

Leveraging architecture communities for alignment

Peter likes the idea of guardrails. But these alone will probably not be enough. In the projects that followed the waterfall approach, detailed domain architectures were designed first. However, that approach is not compatible with the agile approach and changing requirements. The architecture must develop a minimum viable architecture on the basis of which the teams can then develop iteratively and independently within the framework of the guardrails. The Minimal Viable Architectures (MVA) in conjunction with the guardrails thus represent the cornerstones of a coordinated overall architecture. But he is not sure how decision-making should proceed outside the

Architecture Board. Should the teams decide individually for themselves or is there a way for the teams to discuss their problems among themselves and develop solutions together?

Peter recalls a talk he had heard at a conference a few months ago. The presentation dealt with the added value Communities of Practice (CoPs) bring, especially in agile companies. It was pointed out that CoPs help people to learn from each other, tackle problems together and constantly develop "better practices" and mediate them to the various teams.



Figure 3: Reasons for Communities of Practice

Peter now has a clear idea of how he wants to reshape the architecture decision process in the programme:

- **Decisions with local impact** should be made within the teams, supported by the respective Solution and System Architects.
- **Decisions with cross-team impact** should be discussed in the architecture CoP in which Architects from all teams are present.
- Only **decisions with a wide-ranging impact** on future capabilities, budget or timeline, or those where no consensus has been reached in the CoP should be taken to the programme's Architecture Board for formal approval. These kinds of decisions should be prepared in the architecture

CoP. By doing so, the teams will achieve transparency about which teams are affected by the decisions and what support and approval will be needed to get a decision from the Board. In certain situations, where decisions will have an impact beyond the programme, it should fall to Peter to organise the approval process, e.g. with the Architecture Review Board.

This way, the teams should gain the necessary freedom to make decisions on their own without undermining standards that are of greater consequence. The Butterfly Programme will thus ensure a balance between team autonomy, speed and alignment.

Creating transparency on architecture decisions

A further problem regarding architecture decisions was the lack of transparency and access to the decision documentation of the Architecture Board. If the decisions of either the Architecture Board or those of the teams and CoP, are not documented and accessible, there is a risk that those decisions will be unknowingly violated or at least that a great deal of effort will be required to find out about them.

Peter is not happy about the current state of affairs and wants to discuss how architecture-relevant decisions can be made transparent to everyone in the programme with the Architecture Board lead, Carol. Carol refers to the Decision Log, which is maintained on the Architecture Board's SharePoint site.

However, Peter identifies two problems here: this log lies deeply hidden and only accessible for team members with the appropriate permissions. In order for the decisions of the Board to be made known and available throughout the programme, the Decision Log must be stored in a central location that is accessible to everyone in the programme. He proposes that the programme's Confluence space to be used because everyone can access it and it would be possible for the architecture CoP and teams to document their decisions as well.

Carol likes this idea. However, she mentions something that Peter was not aware of. Carol explains that many decisions are unnecessarily protracted because the teams do not adequately prepare the topics to be tackled. The topics are not always announced in advance, but brought up at the meetings spontaneously. Moreover, the feedback from the other supporting teams, which is essential for well-balanced Board decisions, is often not obtained. In such a case, the decision cannot be made and the topic is deferred to a later Board meeting.

Peter suggests developing a checklist in the Confluence decision template so that the teams can use it as a guide during their preparation for the Architecture Board.

At the end of the day, Peter sits in his office and reflects on the things he has learned over the last few days. With a few changes, the Butterfly Programme's architecture decision processes can be made much more efficient and the teams will be able to increase their speed. Peter writes three points on the whiteboard hanging on his wall that he intends to discuss with his colleagues in the coming days. If Peter is right, these points should be key to improving the Butterfly Programme's work processes:

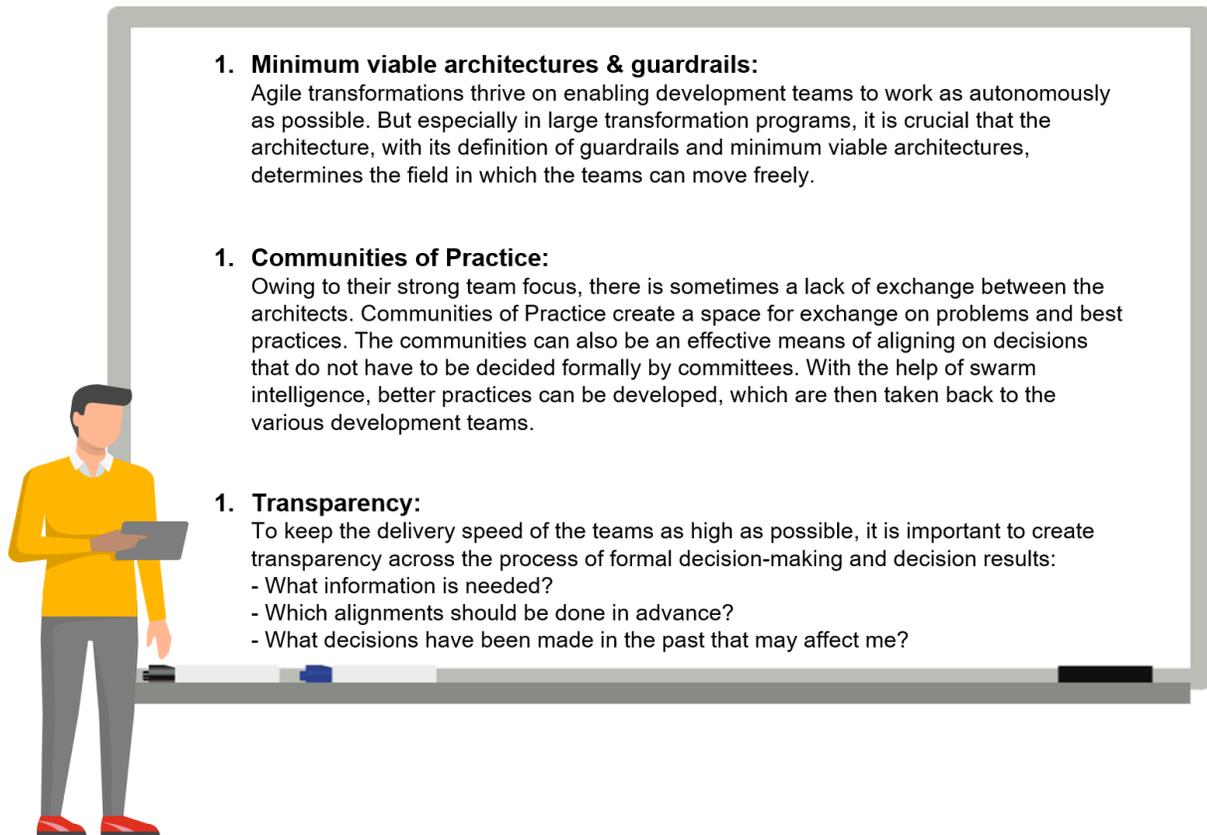


Figure 4: Key Takeaways on Architecture Decision Making

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