



HARMAN AGILE MATURITY MODEL

A tool for continuous improvement & scaling Agile

Abstract

Over the last few years, we have seen a paradigm shift in the way software is developed and IT service industry delivery focus shifting from “Customer Centric” to “Business Value Centric” and hence there is a need to adapt new ways of innovative software development methodology and practices & continuously improve them from time to time. This paper introduces a framework which provides the platform & guidance for continuous improvement & scaling of agile practices.



Introduction

As we know Software industry is growing as we move along the customer business demands & needs are also increasing. Always there is need from the industry for better quality & faster delivery with minimal cost. Customer(s) have become increasingly conscious about the quality & quick value delivery.

Success lies in faster deliveries with high quality shippable product, agility to change & transparency in the system so that it can create a mutual win-win atmosphere. The buzz word "Agile" would be no longer fulfills the changing demands of customer business anymore unless the practices & culture are continuously improved & scaled to greater levels which augment the needs of dynamic market place. Being Agile helps you keep pace with the dynamic work environment but are you Agile enough is a question to be addressed. Why do we need an assessment as we know the constant changes, ever growing complexity of the business environment and client's demands, and the associated risks have compelled the organizations to make a thorough and periodic introspection of their practices and processes & delivery capabilities to ensure that their operations are executed in an efficient, effective and true Agile manner.

As we are witnessing Agile is going to be the new way of software & solution development. As we move along the journey of imbibing agile mindset, culture & practices to enable business growth & market advantage for customers and also we would need to look at the how to scale the overall agile ecosystem and there is need for process improvement model to suit agile software development environments.

Process Improvement Framework

HARMAN Agile Maturity Assessment Tool is a systematic and objective assessment tool that measures the Agile Maturity of global software product engineering teams against industry standard agile principles & key best practices which enables the business to derive the improvement roadmap.

HARMAN framework is built around 12 guiding principles of agile and augmented with industry key process/practices areas which drives the effective delivery eco system, rationale behind the designing the framework in-line with agile principles & industry best practices is to make sure that the proven practices what industry leaders believes follows and what agile community recommends at large are in-tact & practiced.

HARMAN Agile Maturity Model is designed & developed to cater to the agility needs of the organization & customer business. It would enable the business to understand & gauge the current level of practices & culture it's running at & provide a strategic view of the system which could help in recommending the relevant approaches to improve as per business needs. It's a very well structured & simple framework to follow & implement but yet very powerful when used in true spirit. Assessment can be done any of the practitioners & generate self-readable & interpretable reports/dashboards which helps in deriving the improvement roadmap.

HARMAN Agile Maturity model helps to gauge the effectiveness at which system is running so that they can be monitored, improved & scaled to next level from time to time.

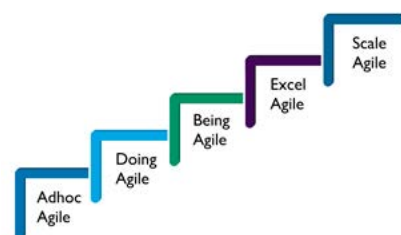
HARMAN Agile Maturity Model is defined in 5 different levels - L1 is Ad-hoc Agile, L2 is Doing Agile, L3 is Being Agile, L4 is Excel Agile and L5 being the ultimate level Scaled Agile. Every level has been mapped with the definition;

L1 - Ad-hoc Agile: Inconsistent practices. Success is dependent on individual. Basic hygiene missing.

L2 - Doing Agile: Process not defined. Agile adoption just started. Non-sync of Test & Development cadence.

L3 - Being Agile: Well defined processes. Team practicing Agile in true spirit. Making consistent delivery sprint on sprint.

L4 - Excel Agile: Focus on engineering maturity. Focus on development and testing started. Team measuring code quality and other key health parameters / metrics.



L5 - Scale Agile: Practice of “develop on cadence and release on demand” scaled principle. Automation of continuous integration and deployment. Practice of gated check-in. Consistent delivery across distributed teams. Online metrics and metrics driven improvement approach. Self-organized team.

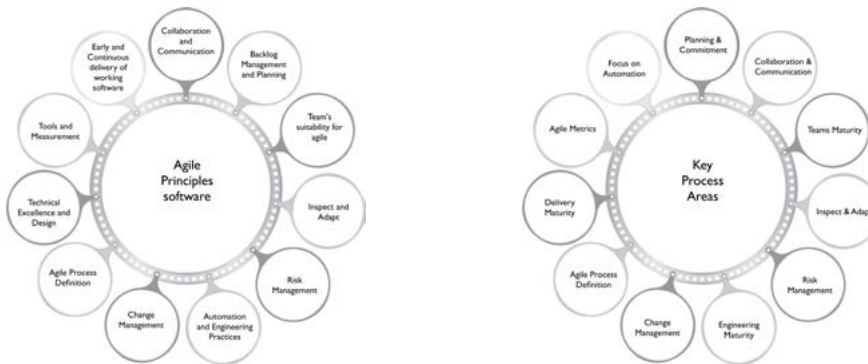
Assessment process is very simple & flexible enough so that any of the agile team member can perform assessment, a project may be assessed at any stage of the lifecycle using the HARMAN Agile Maturity Model (HAMM) and ideally re-assessment should fall between 4-6 months duration from the time of first assessment or considering the rate of change you are expecting between assessments. Assessment can be conducted by team & practitioners, CoE Team, Agile coaches and any stakeholders which would bring in unbiased & independent assessment.

Assessment output comes in 2 different dimensions; one provides the capability of the agile principles adopted in the system & other provides the maturity of the key process areas of the agile system at which it's running.

Model Construction Approach

Agile guiding “Principles” were considered alongside of augmenting with industry agile best practices and software development practices and grouped into “11 Principles & Key Process Areas”. Every maturity level is mapped with corresponding principle(s) & key process areas and each key process area would represent set of practices/processes in the form of questionnaires. Most of principles & key process areas would cut across all 5 maturity levels but not necessarily all.

Agile Principles & Key Process Areas of the framework



Evaluation Criteria & RAG Status Rating Mechanism:

Assessment would be done by answering each questionnaire using options “Yes”, “No”, “Partially Yes”, “Not Applicable”. What does each status represents:

1. **Yes:** Meaning the practice is implemented to the fullest extent as suggested by framework
2. **Partially Yes:** Suggests that implemented partially & there is a scope for improvement
3. **No:** Not implemented the practices or violated
4. **Not Applicable:** Not required in the given context / Need not to implement

<table border="1"> <tr> <td>YES</td> <td>PATIALLY YES</td> </tr> <tr> <td>NO</td> <td>Not Applicable (NA)</td> </tr> </table>		YES	PATIALLY YES	NO	Not Applicable (NA)	Evaluation Criteria				
		YES	PATIALLY YES							
NO	Not Applicable (NA)									
RAG Criteria	86% to 100%	50% to 85%	30% to 49%	Less than 30%						
RAG Status	Fully Achieved	Largely Achieved	Partially Achieved	Not Achieved						

Fully Achieved: There is evidence of a complete and systematic approach to and full achievement of the defined key practices in the assessed principle and KPA.

Largely Achieved: There is evidence of implementation of the defined all key practices under the particular Principle & KPA however there is a scope for increasing the effectiveness of the practices in few areas.

Partially Achieved: There is an evidence of implementation of the few defined key practices under the particular Principle & KPA and there is a scope for increasing the implementation coverage & effectiveness of the practices.

Not Achieved: Very little or no evidence of implementation of the defined key practices under the particular Principle & KPA and there is a huge gap in terms of coverage & effectiveness.

Both Capability & KPA Maturity RAG ratings are calculated based on the following rule set.

Let's consider particular principle has corresponding mapping of 2 key process areas & to which around 10 practices/questionnaires' are attached, while assessing the particular principle capability if all the questions are answered as "Yes" then it would give RAG rating of 100%, if 5 are Yes & 5 are answered "No" out of 10 then you would get rating of 50 % and similarly other combination is 5 as "Yes", 2 as "No", 2 as "Partially Yes" and 1 as "NA".

Each questionnaire / practice status carries some weightage and accordingly RAG rating is calculated as depicted below:

Weightage	RAG Status	RAG Status	Total Questionnaire under Principle/KPA 10	Total Questionnaire under Principle/KPA 10	Total Questionnaire under Principle/KPA 10	Total Questionnaire under Principle/KPA 12	Total Questionnaire under Principle/KPA 12
1	Yes	Yes	10	05	08	03	02
0.5	Partially Yes	Partially Yes	0	00	04	00	00
0	No	No	0	05	0	07	08
Nil	NA	NA	0	0	0	02	02
			100%	50%	100%	30%	20%

Report / Dashboard

Maturity Matrix					
KPA	L1	L2	L3	L4	L5
Planning & Commitment	Not Achieved	Largely Achieved			
Collaboration & Teams maturity	Largely Achieved	Fully Achieved	Fully Achieved	Fully Achieved	Fully Achieved
Inspect & Adapt		Fully Achieved	Fully Achieved		
Risk Management		Not Achieved	Partially Achieved		
Engineering Maturity		Fully Achieved	Fully Achieved	Fully Achieved	
Change Management		Not Achieved	Fully Achieved		
Agile process Definition			Largely Achieved		
Delivery maturity			Largely Achieved	Fully Achieved	Not Achieved
Agile Metrics (Release)			Fully Achieved	Fully Achieved	
Focus on Automation				Not Achieved	Not Achieved
Agile Metrics (Sprint /					

Capability Matrix					
Sno.	Agile Principles	86% to 100%	50% to 85%	30% to 49%	Less than 30%
		Fully Achieved	Largely Achieved	Partially Achieved	Not Achieved
1	Agile Process Definition				
2	Automation and				
3	Backlog Management and				
4	Change Management				
5	Collaboration and				
6	Early and Continuous				
7	Inspect and Adapt				
8	Risk Management				
9	Team's suitability for				
10	Technical Excellence and				
11	Tools and Measurement				

Level 1 (Adhoc Agile)

- Agile is not either used or used inconsistently across org
- Successful delivery is dependent on individual heroics
- Basic hygiene missing in adhering to Agile principles
- The roles, ceremonies, artifacts of Agile are in place but seldom

Conclusion:

To carry out improvement in any field of business arena one need to know the status-quo of the current situation along with desired destination / goal wanted to achieve. Software practices improvements is not different from any other areas. "HARMAN Agile Assessment Maturity Tool is a systematic & objective assessment tool that measures the Agile Maturity of global software product engineering teams against industry standard agile principles & key best practices which enable the business to derive the improvement roadmap".

References

1. Agile Manifesto, Principles - <http://agilemanifesto.org>
2. Maturity Model - <https://www.sei.cmu.edu/cmmi/>
3. Agile Maturity Model (AMM) - https://www.researchgate.net/publication/45227382_Agile_Maturity_Model_AMM_A_Software_Process_Improvement_framework_for_Agile_Software_Development_Practices

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