

## Case Study Material for Agile - Scrum in Software Engineering

The lion's share of revenue of a very large Indian software services company Service Inc. Ltd. has been in IT services space and the company has been very successful in terms of rewarding the investors as well as share-holders. Service Inc. is now a go-to vendor for sectors such as web-based IT applications, manufacturing, e-commerce, banking, information security etc. and has the ability to execute turnkey projects in each of these sectors apart from providing billable engineering resources. IT services sector has been a gold mine for the company but there is stiff competition in these sectors, and the margins are continuously falling while the costs are increasing. Service Inc. continues to thrive as there is a very strong supply chain of engineering graduates produced every year by Indian education sector where the supply far exceeds demand and Service Inc. has always been successful in achieving a profitable labour arbitrage to maintain both growth as well as profit. Currently Service Inc.'s revenue is growing steadily at 12% year-on-year (Y-O-Y), whereas the margins are growing at 10% Y-O-Y.

Service Inc. wanted to diversify into high margin sectors and started a Consulting division. However, the Consulting division did not really scale apart from its ability to bill resources at a higher rate. Hence, five years back, Service Inc. decided to get into the Product engineering space as they believed that it would help them increase their profit margins. A role of Senior Vice President (SVP) was created and this role would be in-charge of Service Inc.'s product engineering operation and be accountable for its performance.

Service Inc. in the last 5 years has been able to set up multiple engineering centres with many international software product companies, with whom they already had an existing IT services relationship. The engagements with these relationships, so far have been limited to customer support, sustaining discontinued products, or near end of life or planned to be discontinued EOL products in which these product companies do not want to continue devoting their critical engineering resources on. These product companies were paying Service Inc. higher billing rates than the pure IT services sector, but not the premium pricing commanded by product engineering of growing products. This was not what Service Inc. management aimed for. The new SVP in charge of product engineering services has been set a goal, by the CEO of Service Inc. During their annual target setting meeting, to increase the engineering services revenue by 25% and margin by 40% in the next 3 years.

The product engineering services SVP of Service Inc. started by seeking meetings with all his engineering services clients in order to understand what is amiss.

Product Inc. Ltd. has been one such key client of Service Inc. Culturally Service Inc. and Product Inc. are poles apart. As an example, Product Inc. is a flat organization with open offices, where engineers and managers including VPs and SVPs share open cubicles, with the senior managers having offices in corners where engineers do not need to go often, and are designed with dedicated conference rooms for meetings. On the contrary, in Service Inc., one can make out the seniority of a manager in the organization by the size of his desk and room that he has been allocated. Product Inc. has been a client of Service Inc. for last 7 years and currently has four engineering centres dedicated to four product lines managed and manned by Service Inc. in Bangalore. The principle followed for the engineering centres was to "Build, operate and transfer (BOT)" although the transfer has still not happened for the 4 centres. Current operating margins for these centres is higher than pure play IT services, but not the high margins as being expected. Service Inc.'s interest now is to avoid the transfer of these centres, and to move up its relationships with Product Inc. as a partner in product roadmap execution. Product Inc. has a large investment in Service Inc., and visualizes higher benefit in Service Inc. coming up the value chain.

Service Inc. SVP worked out a year wise growth plan to meet his growth target and also realized that Product Inc. being his key account, his ability to meet his target depended on making Product Inc.

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agree on handing over execution of a part of product line roadmap for growing products on a revenue sharing basis. Product Inc. SVP is responsible for many billion dollars of product revenue and is also very forthright in his communication as he has a very busy schedule.

In the meeting with Service Inc. SVP, Product Inc. SVP first summarized the key strengths of Service Inc. i.e. Service Inc. operates on building air tight requirement, tends to freeze it before committing their resources, have trained project managers focusing on coordination, have skilled program managers concentrating on rigorous change management, builds extensive documentations with super elaborate processes and these are helpful in billing clarity for both and preventing revenue leakage for Service Inc.. Additionally, Service Inc. has been very successful in shielding Product Inc. from resource issues, customer complaints and the sustenance headaches the Product Inc. SVP want his core engineering team to be shielded from. However, these are the strengths are also the weaknesses for executing a roadmap for a product which is in the growth phase. Product Inc. also indicated that in his perspective, Service Inc. was simply not agile enough for an agile product where uncertainty and constant change are the only truth and relying on volumes of documentation is just a waste of time that a fast-growing product cannot afford. The ways of working of Service Inc. engineering management is hierarchical and bureaucratic which would work for sustenance, but for a pure product engineering operation being agile is an imperative and thus Service Inc.. cannot be relied upon for product line roadmap, in spite of its army of quality professionals with certifications. This is where the meeting ended.

The Service Inc. SVP thanked Product Inc. SVP profusely for the frank feedback and promised to return back after building the required competency. Product Inc. SVP promised to help Service Inc. in making this transition saying that extra help from Service Inc. in executing his ever-changing product roadmaps would always be helpful!

Service Inc. SVP came back to India and had a meeting with his general managers running product engineering centres in India. They came up with a resolution to train the project managers, program managers, lead engineers in Agile and Scrum. The general managers agreed that this was really an organizational change program that they needed to execute, to make Service Inc. transition into high margin product engineering for growth products. Service Inc. had no dearth of budget and its internal process quality team was roped in for this transition. Roles were created and people were recruited as members of process quality team to champion these methodologies. The walls of the engineering centres run by Service Inc. were adorned by large posters that depicted key points in these methodologies. These posters would remind the employees constantly about the processes they would be following and most employees in these centres underwent training. Service Inc. SVP has been very pleased with the progress made in first 6 months.

After six months, Service Inc. SVP got in touch with Product Inc. SVP and sought his help in assessing Service Inc.'s readiness for an expanded role. Product Inc. SVP in order to support Service Inc. flew in a Sr. Program Director Stan from their main engineering centre in California to Bangalore for an extended period of 8 weeks. Service Inc. was more than happy to bear the cost. Stan is a young man who quickly rose through the rank in 12 years and as a senior program director, he was an individual contributor directly reporting to Product Inc. SVP of products. General Managers running Service Inc.'s engineering centres have an experience in excess of 22 years individually and had teams of 200+ reporting to him/her directly and indirectly. Stan had previously visited Service Inc., and was not very popular with Service Inc. General Managers. Stan had the habit of talking directly to engineers and junior managers rather than seeking meetings with them in the presence of Service Inc. general managers in one of those elaborate cabins.

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Service Inc. SVP, with input from his general managers, came up with a list of projects from the 4 Product Inc. engineering centres managed and manned by Service Inc. The list was handed over to Stan before his travel to India. The identified projects were of two types:

- Maintenance projects that were purely for discontinued products witnessing only customer issues and bug fix request. The responsibility of the team in these was purely bug fixes patch releases.
- Projects that were shortly getting to discontinuance, and hence getting few enhancement requests. The responsibility for the team in these type of projects, was releasing minor versions (no more major versions were allowed) with few enhancements and many bug fixes.

Stan as part of assessing the four engineering centres that Product Inc. had in Bangalore proposed that he would share his findings in a presentation focussing on Agile Scrum implementation.

- Stan took the 1<sup>st</sup> week to get introduced to all stakeholders in each centre and got started
- Stan managed the conduction of planned anonymous surveys (conducted by Product Inc.) seeking feedback from both lead engineers and managers in diverse engineering roles in each centre. Due to the way the survey was conducted and controlled by Product Inc., there was no scope of Service Inc. influencing the responses though Service Inc. tried it's best to coach its employees beforehand. This was done as Product Inc. management was very keen to understand the real status of Service Inc. readiness before delegating responsibility of roadmap of any critical product and so ensured that a honest anonymous feedback was taken. For example, whenever engineers gave a feedback contrary to those by their managers, engineers' feedback was taken as ground reality.
- In addition, Stan attended the Sprint pre-planning meeting, Sprint planning meeting, many daily Scrum meeting and Sprint review meeting of a 4-week sprint at each of the four centres. This gave Stan sufficient insight to sanitize what he received through anonymous survey process. This whole process took around 5 weeks
- Stan took the 7<sup>th</sup> and part of 8<sup>th</sup> week to consolidate his findings
- The presentation on the findings was scheduled in the 8<sup>th</sup> week of his stay.

Stan in a presentation to the Service Inc. and Product Inc. SVP listed his key findings across the four engineering centres. This presentation was planned and focused on Scrum implementation as that is what Product Inc. follows.

Each presentation specifically had to provide a "go/no go" recommendation at the conclusion. Service Inc.'s fate of whether Service Inc. would partner Product Inc. in executing their current product roadmaps depended on this assessment.

The summary of Stan's PowerPoint presentation, which was done for 90 minutes, is listed in the table below. The Service Inc. SVP was naturally keen about the Go/No GO decision at the end of it as his ability to scale engineering services revenue by 25% and profitability by 40% depended on his ability to get started with Product Inc. on a critical product.

The recommendation on the final slide was a "No GO"! Service Inc. SVP and his team of General Managers were stunned!

Product Inc. SVP as he heard the presentation was seriously considering keeping Service Inc. relationship limited to low value IT services and moderate value product maintenance services. He was answerable for quarter-to-quarter performance and had no time to wait for the maturing of the Service Inc.'s organization as a result of successful organizations change. In his mind, the only other

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alternative was to parachute out of the BOT relationship with Service Inc. in next one year and instead build Product Inc. “owned and operated” engineering centres from scratch through a subsidiary company.

**Table: Findings of Scrum implementation in Service Inc. run engineering centres EC#1 to EC#4)**

	Key findings	EC#1	EC#2	EC#3	EC#4
1	From the experience and records it is clear that all daily scrum meetings, sprint review meetings happened without fail. Each of the team members took 10 minutes to update and for an 8-member sprint, daily stand-up meeting takes 60-90 minutes including all the discussions. Each sprint team has 1 scrum master, 1 product owner, 2 test engineers and 5 developers. Scrum Master and Product owners are rotated across sprints.	Y	Y	Y	Y
2	In the 4-week sprints, quality engineers joined after 2 weeks as they are rotated among projects and there was nothing ready for testing till the end of 3 <sup>rd</sup> week. The test engineers wrote test cases in the 3 <sup>rd</sup> week and tested in the 4 <sup>th</sup> week. This was the usual pattern	Y	Y	Y	Y
3	The project manager has been trained into the new role of Scrum Master. They are now doing these main tasks <ul style="list-style-type: none"> <li>Deciding and assigning tasks among team members</li> <li>Keeping track of the assigned tasks</li> <li>Making commitment on behalf of the team</li> <li>Convince and motivate the team members on the commitments made</li> </ul>	Y	Y	Y	Y
4	Team members are also responsible for emergency product issues and that tends to majorly upset the sprint deliverables. The sprint backlog underwent changes till 3 <sup>rd</sup> week	Y	Y	N	Y
5	In sprint review meetings, two things were routinely done: <ul style="list-style-type: none"> <li>Detailed presentation about the just concluded sprint</li> <li>Feedback was collected from all members</li> </ul>	Y	Y	Y	Y
6	After the Sprint planning meeting, task list was only a draft. The product owner discussed the draft with the centre manager and based on his feedback, there were few online discussions with the scrum master and team members following which task list is finalized by end of 1 <sup>st</sup> week of the sprint.	Y	Y	Y	Y
7	In terms of metric, the backlog at the beginning of the scrum is more ambitious than the average velocity of the scrum teams recorded so far as the teams prefer to take ambitious targets. They were encouraged to do so.	Y	N	Y	Y
8	Product owners in the scrum teams have worked with the products ever since the centres have been set up but have never met a customer	Y	Y	Y	Y