Achieving Winning Outcomes in Enterprise Application Integration (EAI) with Agile

Abstract

Enterprise Application Integration (EAI) is fast becoming a well-accepted technology solution, working discreetly in the background, integrating information, processes and applications across the enterprise landscape. However, the technology is not without its limitations.
To overcome these challenges, this paper outlines the process to implement Agile in EAI by leveraging the '4-pillar strategy'. The proposed model focuses on collaborative efforts between the IT service vendor and the customer's IT team and will serve as a great starting point, helping businesses scale with a strong strategy.

EAI and its relevance to the modern business landscape

How does EAI work? The core function of EAI is similar to that of the veins in the human body. Just as veins play a crucial role in circulating oxygen to vital body organs 24x7x365, EAI is the underlying, integrating factor across diverse business domains including Sales & Marketing, Engineering & Manufacturing, Finance and others.

Enterprise Application Integration seamlessly assimilates data, processes and applications across the business landscape, 24/7. However, EAI is more in the heard-but-rarely-seen category. Simply put, it moves invisibly, helping efficient data flow from one program to another. EAI enables a single access point for users, simplifying the entire IT process and supporting a smooth flow of business operations. Paradoxically, due to its very nature, EAI's function and presence is felt only when there is a glitch in business operations.

Identifying key challenges in EAI

All enterprises, especially in the Manufacturing and Steel domains, have a diversified product portfolio, which is in turn internally connected through EAI. Given that Enterprise Applications are complex systems, the challenges faced by EAI are multidimensional in nature.

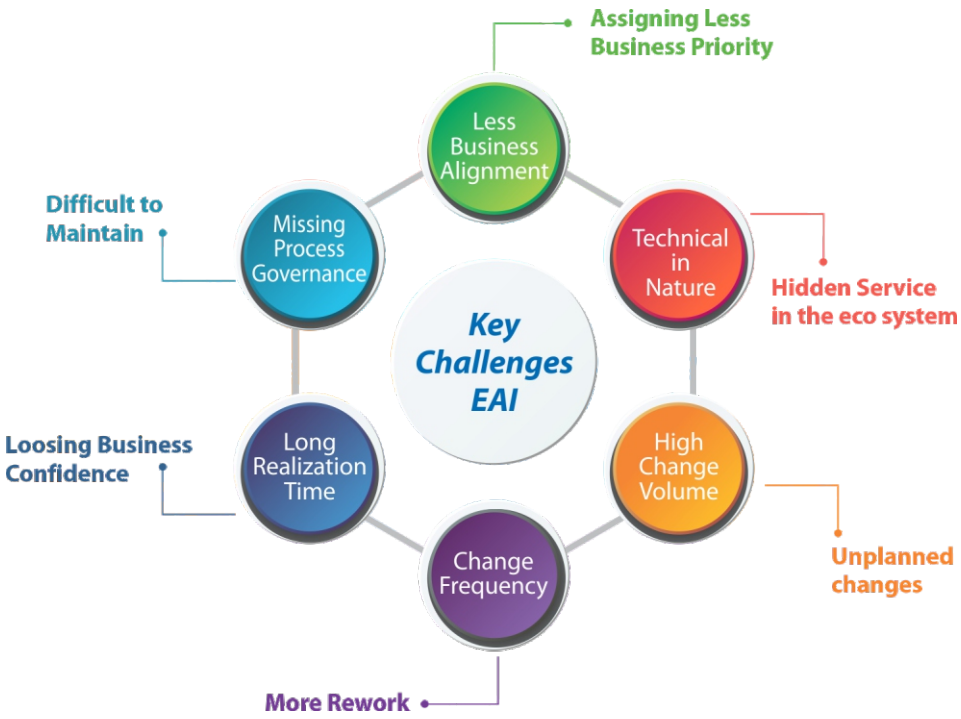

Figure 1: Key Challenges of EAI

- **Dynamic business requirements and environments:** While developing new initiatives in an ever-changing business landscape, the EAI team typically comes into the picture at a later stage, once the components are designed and built. Minimal alignment between the EAI team and business stakeholders concerning data integration and the end-to-end process often results in grey areas concerning EAI delivery timelines. This poses a major challenge to survival in changing market conditions.
- **Frequent changes in EAI:** Most businesses focus on Source/Target user applications, necessitating frequent changes in EAI. Businesses still adopt the traditional Waterfall Model, which requires complex processes to update changing business requirements. This leads to delayed value realization, negatively impacting the business.
- **Managing multiple process standards across business units:** Various business units in an enterprise have their own process standards and see data differently. Since EAI stretches across the enterprise, adhering to localized process standards lowers flexibility and asset reusability. Moreover, in an ongoing change environment, it becomes very difficult to manage multiple projects, enhancements, transformation initiatives and ad-hoc requests raised by different business domains. Huge efforts are made on project tracking and management, which involves costs and time. Add to this efforts to enable mutually agreed deployment change windows and aligning all stake holders. Hence, there is an urgent need for solutions to track the continuous volume of growing tasks.

Overcoming challenges with the '4-pillar strategy'

Companies, especially steel manufacturers, have little time between 'Concept Ideation' and 'Product Launch' phases. In today's era of Business 4.0, Agile as a solution effectively addresses this business problem. However, a majority of businesses across industries are skewed towards the traditional Waterfall Model when it comes to EAI.

Implementing Agile in EAI is not easy. Most IT service vendors are unsuccessful in their efforts because their strategy lacks alignment with the business. Moreover, IT vendors do not easily secure business buy-in mainly due to the lack of new frameworks and models. The solution lies in the 'IT4IT Reference Model', which focuses on implementation of industry

standard frameworks for standardization of EAI processes across different business units within an enterprise. However, this model is to be treated as just a starting point and will be effective only when a strong strategy is in place.

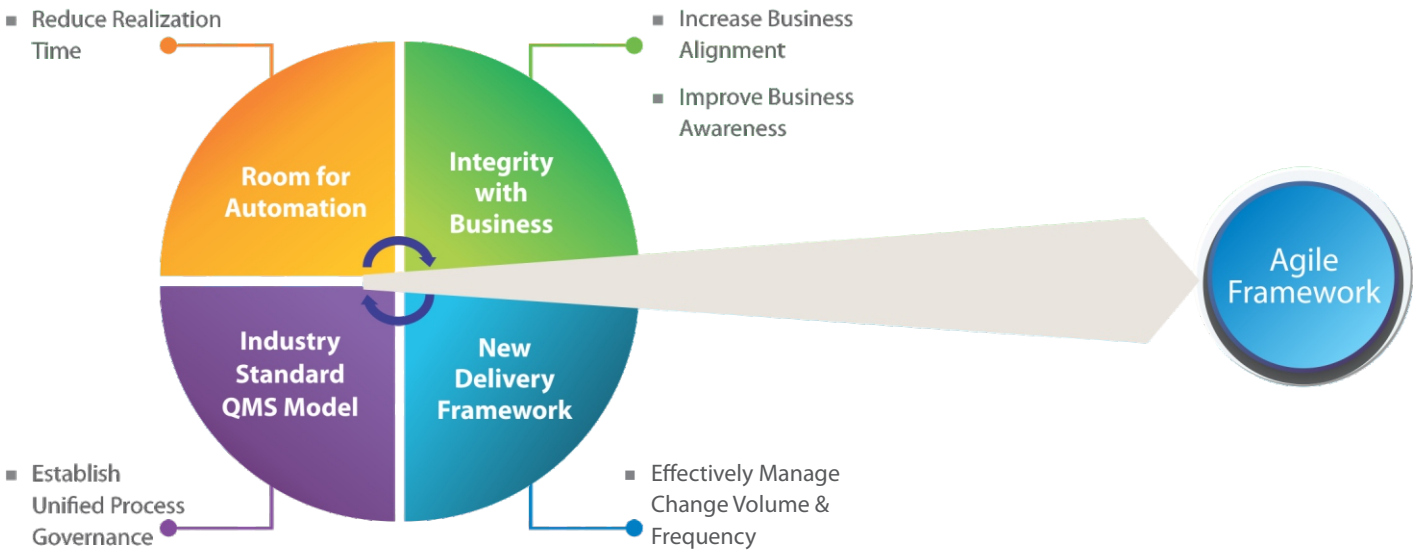

Figure 2: Approaches for Successful Implementation of Agile for EAI

Here are four effective strategic approaches to successfully implement Agile for EAI:

- **Integrity with Business:** An effective collaboration with the business to help them understand the importance of the EAI stream. This can be achieved through Agile workshops and seminars with business stakeholders. However, since this transfer of knowledge would involve non-CIO work force, it is important to get the customer's IT team on board for effective communication.
- **New Delivery Framework:** Most businesses are not very confident about product delivery timelines. An effective collaboration, which involves understanding business requirements and adopting a lighter delivery framework that allows frequent updating of customer needs is the solution. Joint adoption of the Agile framework will usher in early value realization.
- **Industry Standard Process Model:** Very often, even if businesses understand the importance of EAI in fostering productivity, IT vendors face reluctance on the part of enterprises in adopting the model. In order to build a trustworthy, collaborative buy-in, it is necessary to have standardized tools and techniques in places. IT vendors can initiate discussions with the customer's architecture team to set-up and maintain a Quality Management System model

based on a standard reference model (e.g. Open Group IT4IT reference model) which is well- accepted in the industry.

- **Room for Automation:** Reducing the realization time by moving towards increased automation in build, deployment, and monitoring using tools such as Jenkins, Nexus and using automated scripting can achieve the desired results.

Chartering the Agile roadmap for EAI

A strong strategy and a detailed roadmap are essential for effective implenation of Agile methodology. Given below is a roadmap to enable successful application of Agile, mapped to the '4-pillar strategy'. Each unique pillar is mapped to the roadmap developed here.

- **Awareness**
  - Get an early buy-in from the customer IT and business teams
  - Approach business users via customer's IT Manager
  - Conduct seminars and workshops during the initiation phase
  - Initiate agile awareness within the business
  - Regularly invite the customer's IT Manager and business users to experience proceedings and share feedback, throughout the lifecycle
- **Training & Coaching**
  - Initiate Agile training within the IT service vendor's EAI team
  - Assign one agile coach to support and guide teams
  - Collaborate with the EAI team, customer's IT team and business teams to form a One Team Model
- **Agile Team Formation**
  - Ensure the customer's IT Manager functions as the product owner (This can be for the initial period when business is low)
  - The business can act as co-product owner during the initial period
  - Customer's IT team should effectively integrate with the business
  - Teams should adopt Scrum and Kanban frameworks
  - Invite business teams to participate in the Agile Standup on a regular basis

- **Agile Practice**
  - Organize daily stand-up meetings for 15 minutes
  - Introduce boards to track daily progress
  - Appoint rotational scrum masters to share notes with agile coaches after every sprint
  - Implement bi-weekly sprint planning and backlog refinement of tasks
  - Follow burn-down chart and velocity chart for easy forecasting and planning
  - Conduct regular discussions with the business to highlight early benefits
- **Tools & Infrastructure**
  - Use Microsoft Excel to define Task Backlog, Sprint Planning and Sprint Retrospectives
  - Use Jira for efficient and effective management of activities
  - Enable automation in-build, deployment and monitoring, using tools such as Jenkins, Nexus and automated scripting
- **Benefits Realization**
  - Improved planned efforts
  - Increase in worth of work delivered per sprint
  - Faster delivery
  - Process standards on par with industry standards

Conclusion

The '4-pillar strategy' was first implemented in 2016 by a steel pioneer in Europe, well ahead of its time as the steel industry was just opening up to Agile practices. The steel manufacturer had fully transformed its EAI area to Agile framework. Even with a complex landscape consisting of a diversified portfolio and 800+ varied legacy and digital applications, the 4-pillar strategy stood the test of time, all due to a well-conceived approach. The manufacturer is now testing the sustainability of the Agile in EAI approach in other areas across the company.

As the challenges faced by EAI are common across business verticals, the 4-pillar strategy can prove to be effective, helping businesses across industries grow and scale with agility. This approach will help maintain data consistency, enable intelligent workflows and foster better relationships with customers, partners and suppliers, leading to enhanced business outcomes.

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Sumit Das is a EAI Specialist and Agile Practitioner with the Energy & Resources Unit of Tata Consultancy Services (TCS). For the past 12 years he has worked across different domains including Steel Manufacturing, Supply Chain, Banking and Finance Industry. In his current assignment with a European Steel Manufacturing giant, Sumit has successfully contributed across multiple roles, and is presently the Enterprise Application Integration Architect, managing the entire EAI Landscape for the customer across UK, Netherlands and other locations in Europe.

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