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Going Agile with SAP
by Suzanne Mallette
Second Edition

Going Agile with SAP[1]

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CMC Background

Founded in 1915, Commercial Metals Company and its subsidiaries recycle, manufacture, and market steel and metal products and related materials through a network of locations around the world. CMC is an efficient, high-quality, low-cost producer. With a high degree of vertical integration and is organized into five business segments across two geographic divisions:

CMC Americas: Americas Recycling, Americas Mills, Americas Fabrication

CMC International: International Mill, International Marketing & Distribution

## Complexity of the Business and Business Drivers for Change

CMC has been on SAP since 2008 with approximately 5000 users. We are a full SAP shop and have implemented a wide range of SAP products. The division that undertook the SAP implementation using Agile is unique because it is unlike other areas of the company since profits are made on both the purchase from the vendor and the sale of scrap material to the end user.

Through contract negotiations on the buy and sell side, unique pricing models exist depending on the vendor/buyer relationship which can include the type of scrap material being purchased and sold. The legacy system the division was previously on was not sufficient for these intricate pricing transactions and left the division managing these contracts manually, through spreadsheets, and required triplicate entries into the legacy system, once for the purchase and another for the sale, then manual reconciliation of the transaction(s) were sent to the vendor or buyer of the scrap materials.

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[1] *Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the 10th Annual UT Dallas Project Management Symposium in August 2016. It is republished here with the permission of the author and conference organizers.*

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The business driver for change was to streamline their business processes and reduce the effort of data intake and entry processes. Additionally, the division wanted a system that provided a solution for intake that allowed minimal redundancy, eliminated the need for spreadsheets to manage data entry and pricing, and to move off of their legacy system and onto SAP. The benefits of moving to a new system outweighed remaining in the legacy system and included full automation of their pricing models; reduce risk of errors with manual processes and re-alignment of resources to a more sales focused role. The ability to drive automation with an end to end solution in place would also allow better reporting capabilities to support better business decisions. There is a history of unsuccessful attempts at moving this division within CMC from their legacy system to SAP because of their complex business model. The business was apprehensive on giving more time but they come to a point where an increase in overhead with more staff would be required if new business was taken on.
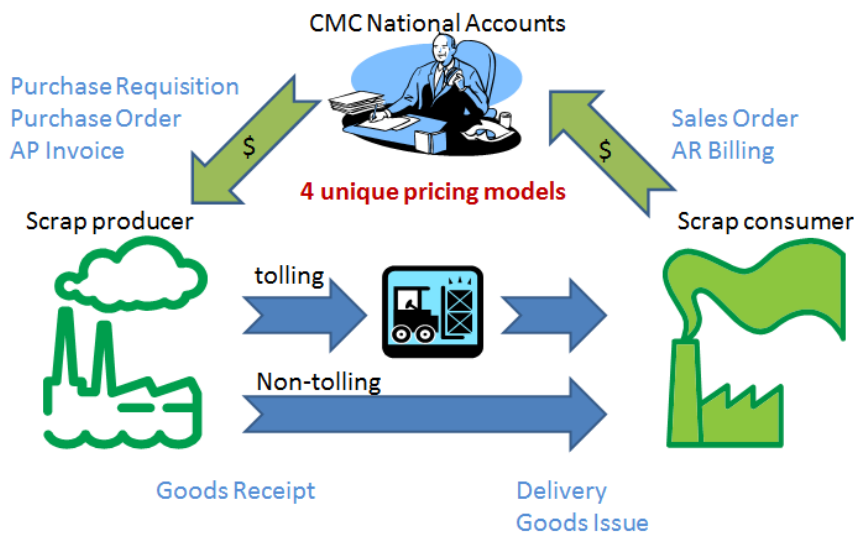
Project Background

The efforts to move the division off of the legacy system restarted again in early 2014. The project stalled temporarily due to resource availability with competing projects and timelines. The project team regrouped later in 2014 and reaffirmed with the business on project expectations. This required re-evaluating the scope of the project and, understanding the challenge ahead of them, the project team committed to going agile with this implementation.

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Project Team Commitment to Go Agile

Not only was the project team aware of the challenge of moving the business to SAP, they were also new to the agile methodology and scrum processes. At CMC, there was no reference from past projects implementing SAP using agile. Typically, use of agile was left to our web development teams which, from years of utilizing, are well mature with this methodology.
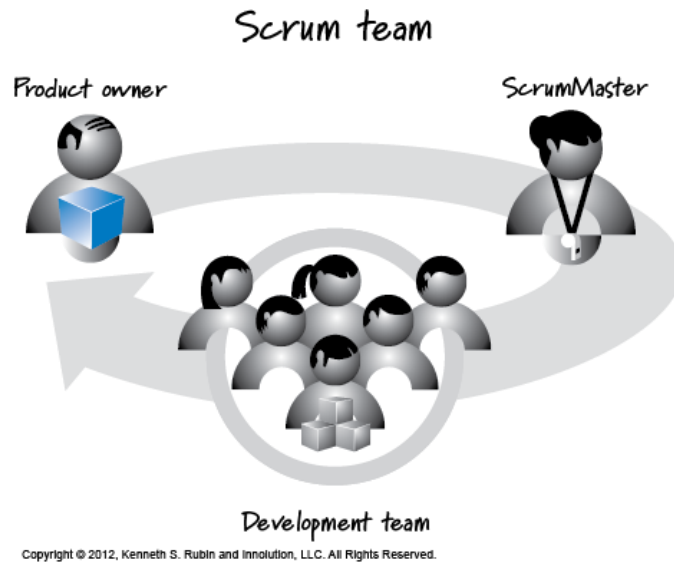
The project team had some growing pains to work through and all learned the scrum processes as we restarted the project. Using agile required a change in mindset which meant involving the business throughout the entire project and become a self-organizing team. It also required the business owner to understand what it meant to become an empowered product owner.

Why Agile?

The project team knew going into the project the complexity of the business and many unknowns that would be discovered the more questions were asked and a general understanding of the business was revealed. The project objective was to move the division off of their legacy system and redefine some of their business processes. Quick adoption to the new system was critical and the team needed to avoid an ERP disaster.
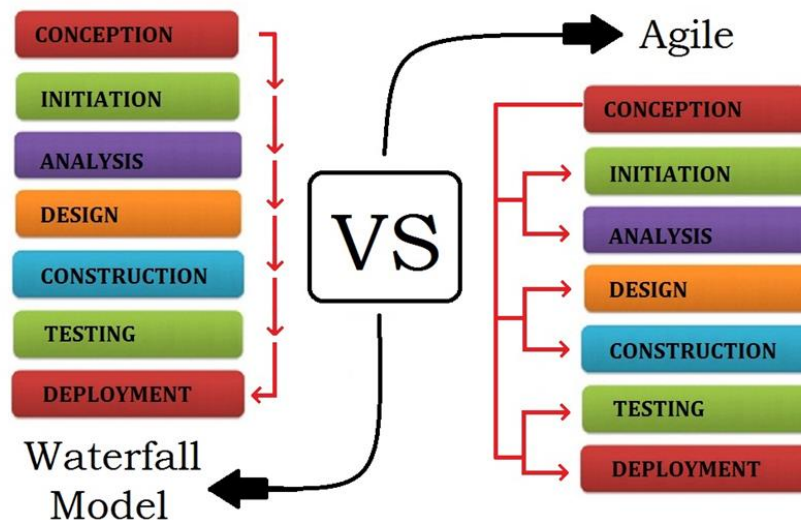
How does Agile using Scrum Work?

Scrum is an agile framework for developing software. Development occurs iteratively and works well for complex projects and is effective for team collaboration. It provides just enough structure for the team to focus for a short period of time. In scrum, there is a Product Owner whose role owns the product backlog and determines what needs to be built. The Development team build what is needed, (e.g., configuration and development of the system). The Scrum Master removes any team impediments, ensures the scrum processes are smooth and provides any scrum coaching to the project team.

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Waterfall vs Agile

What is the same?

Although the approach of implementation differs, agile still has system users, system developers, and the mechanism of configuring and developing the system all still exist. Requirements are captured, albeit, a different way, still define what needs to be built. Similar to waterfall, in agile, there still exists analysis, design, build, test, and deployment.

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What is different?

Requirements are captured as user stories and build up what is known as the product backlog. The product owner manages the product backlog and typically introduces user stories to be built during sprint planning. The user stories that are introduced by the product owner are reviewed by the project team. The user stories encourage discussion between the product owner and the project team to gather more specific details and to "deep dive" on possible solutions.

The project team will continue to review and collaborate subsequent user stories submitted by the product owner until a capacity is reached and a commitment is made on a set of user stories for a particular sprint.

Commitment by the project team to build a small set of features during a time-boxed sprint allows the team to discover problems in a shorter amount of time and gives the team the ability to respond to change more quickly, delivering value much faster.

The below diagram provides an example of a user story and acceptance criteria used to test and validate a feature:
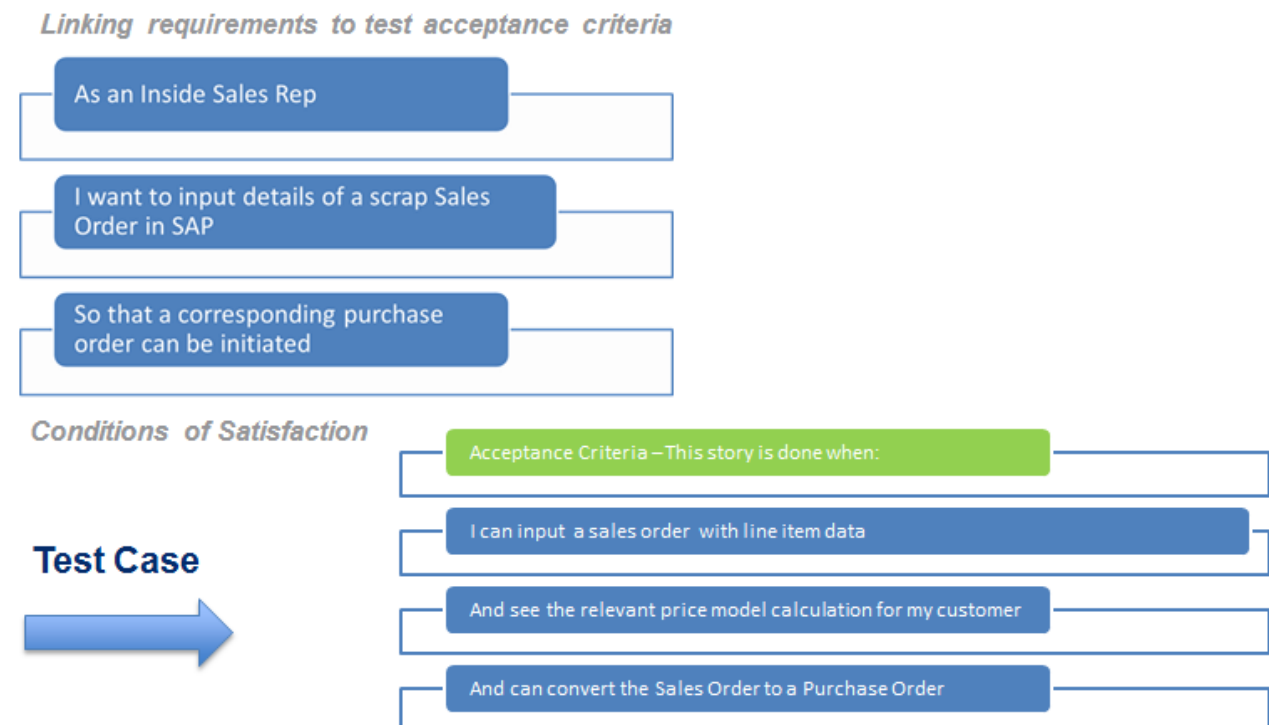
Product Backlog - The product backlog is made up of user stories managed by the product owner. At any point in time new user stories can be introduced to the backlog. However, before stories are introduced during sprint planning, stories are more refined and broken down into smaller more manageable user stories.

This diagram below provides a conceptual of user stories in the backlog. As user stories move up in prioritization, stories become smaller, allowing them to become easier to estimate, develop, and testable.
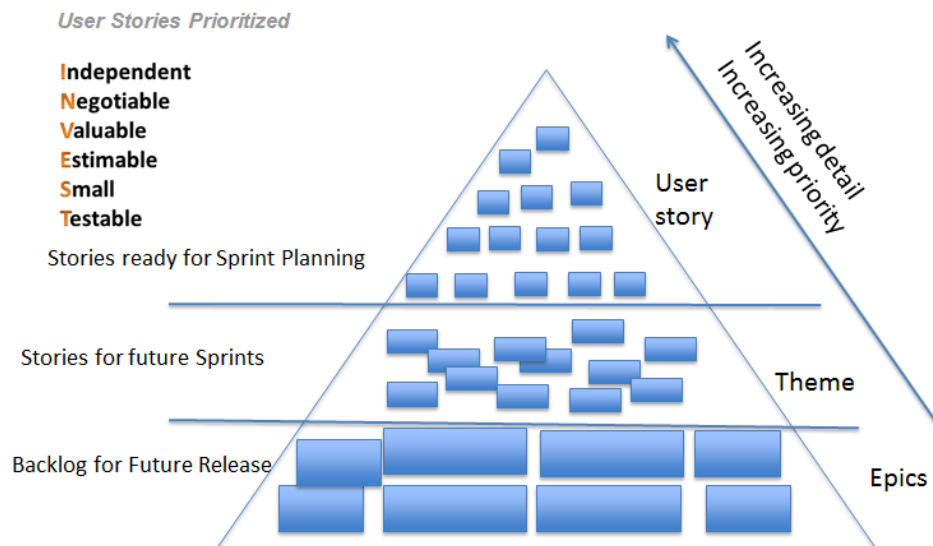
Scrum Ceremonies

The agile methodology utilizing scrum involves several scrum ceremonies. **Sprint planning** introduces new user stories to be built for a sprint. User stories committed for a sprint are added to the sprint backlog with tasks identified and assigned. **Daily scrum** is a daily stand up meeting with only the project team members addressing three questions focusing on the user stories for a sprint: What did you do yesterday? What will you do today? What impediments are in your way? At the end of the time boxed sprint, the sprint review is a meeting to demo to the business the features built for a sprint. The **sprint review** provides immediate feedback to the project team on the development completed to ensure what was conveyed in the user stories is in line with the features built. **Sprint retrospective** is for the entire project team to meet and review the completed sprint and each team member is asked what the team should start, stop, and continue doing.
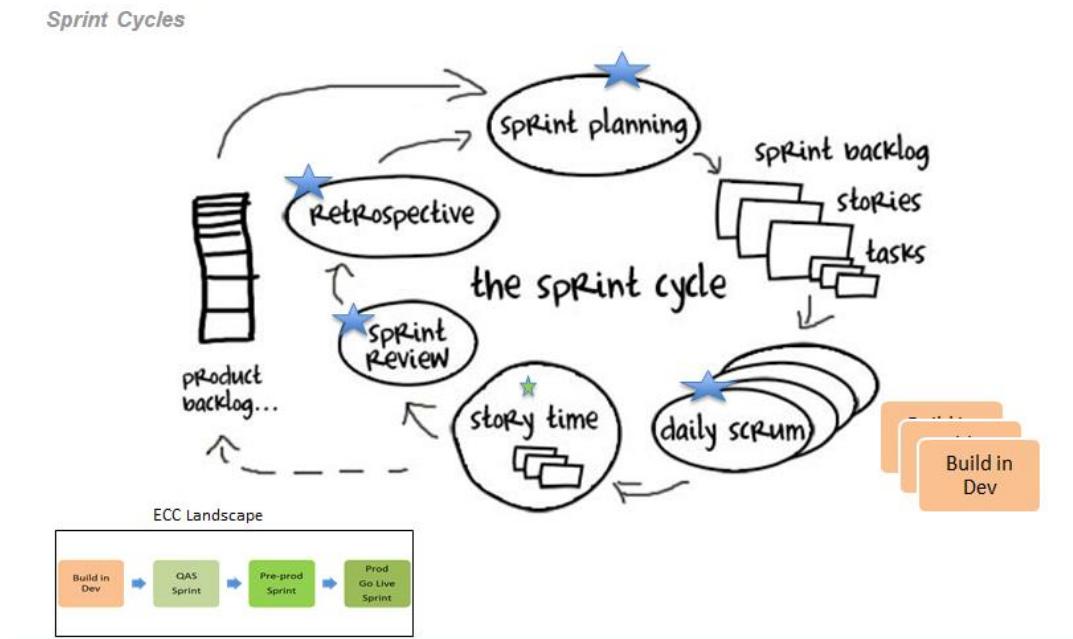
Project Retrospective

At the conclusion of the project, we reflected on our experience using agile with scrum processes. The team agreed that the constant engagement was great for the stakeholders and commitment by the product owner to participate every day was critical to the success. Challenges the team noted was sprint time-box commitments were difficult to adjust considering they can be fast paced and the intense focus to deliver certain features at the end of the sprint. Actions the team noted that will improve future implementations using agile included a dedicated space for collaboration so that design discussions could happen more frequently.

Project Results and Customer Feedback

Customer feedback on their experience using agile included seeing working software during sprint reviews was valuable. Because of this, trust and confidence in IT was established to deliver features. The project team succeeded and moved an entire business onto SAP.

Keys to Success

Organizational support for going agile is critical and having a dedicated product owner is key to a project's success. From a team perspective, they are more empowered to make decisions on features being built. Additionally, a collaborative and cooperative approach between all stakeholders is essential.

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Background includes a combined 16 years' experience implementing ERP systems and
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