Implementing a Dual-Operating System with Scrum@Scale

An anonymized case study showing actual results.

scrum**inc**.

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With more than $1 billion in annual revenue, *Safety Co.* is the North American leader in the development and manufacture of active safety solutions for commercial vehicles.

A key aspect of *Safety Co.*'s operations is the implementation of a dual-operating system incorporating both Scrum@Scale and traditional practices.

Successful dual-operating systems combine the stability and predictability of traditional management practices (the hierarchy) and the innovation, speed, and rapid value creation delivered by Agile teams (the network).

Incorporating both a traditional hierarchy and a network requires much more than a delineation of responsibilities. Known stable interfaces like the Executive MetaScrum and Executive Action Team allow the network and hierarchy to efficiently communicate, collaborate, and align.

Safety Co. is seeing the positive outcomes a dual-operating system can generate during their agile transformation.

> I still need to be able to run a business in a more traditional way. This lends itself towards a dual-operating model.
>
> – Safety Co. President & CEO

> (The ability) to pull the entire organization to the same intent, same view, the same goal I think was only possible because we had this new method that we've adopted.
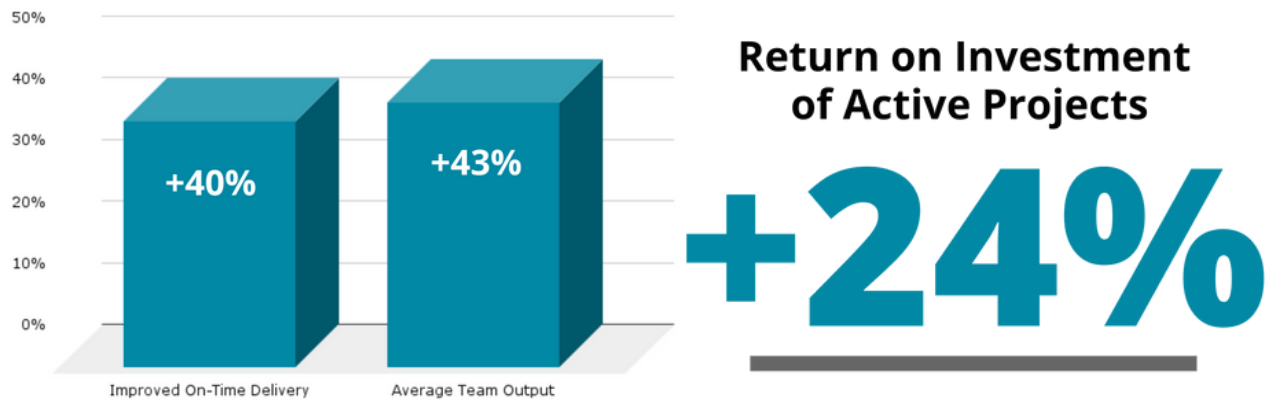>
> – Safety Co. President & CEO

Key Results Include:

- **Improved the customer on-time delivery** performance of product development projects by **40 percent**

- **Return on Investment** of active projects **increased by 24 percent**

- **Average network team output** (velocity) **increased by 43 percent.** Notably, some team velocities jumped by 300 percent

- **Increased the cross-functional skill set** of each team versus the total skill set needed to deliver working product by **20 percent**

- Prioritization and maximizing value delivery are the primary goals of the Executive MetaScrum. At *Safety Co.* this benefits:
  - **The network** by providing alignment to the top of the company on what the focus should be for each team
  - **The hierarchy** by connecting the alignment into the core central functions like HR and Finance to ensure staffing and budget

- The average cycle time for tactical impediment removal by the Executive Action Team at *Safety Co.* is 3 days, though many impediments are removed within 24 hours
  - **This benefits the network** by providing quick action so short-term goals can be met
  - **This benefits the hierarchy** by providing transparency quickly to systemic issues that need to be addressed by changes to policies and procedures

The successful implementation of a dual-operating system with Scrum@Scale at *Safety Co.* means the company continues to meet or exceed the rigorous testing, safety, regulatory, and other requirements for all its products.

This anonymized case study begins with a brief overview of the dual-operating system model. Next, it examines some of the unique elements of Scrum@Scale that accelerate the benefits of business agility while reducing the potential risks of disruption. Finally, it explores how *Safety Co.* uses the Scrum@Scale framework to implement a successful dual-operating system that has led to positive enterprise-level change and business agility.

Results at a Glance

Return on Investment of Active Projects

+40% Improved On-Time Delivery

+43% Average Team Output

+24%

The Hierarchy

The primary purpose of the hierarchy is to provide the network with what it needs to thrive and accomplish the important baseline functions which keep the business running.
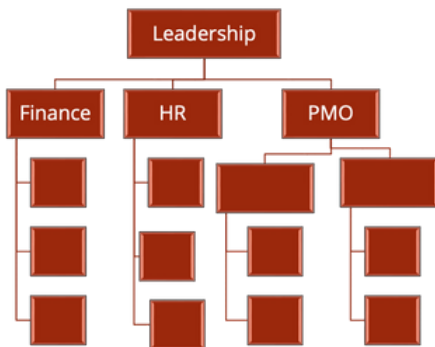
Known Stable Interfaces

Known stable interfaces like the Executive MetaScrum and Executive Action Team allow the network and hierarchy to efficiently communicate, collaborate, and align.

The Network

The primary purpose of the network is to be the creative engine that powers the company and delivers value quickly to customers.

Leadership

Finance   HR   PMO

The Executive MetaScrum

The Executive Action Team

Agile Practice / CoE

01 Introduction

Safety Co. is known for delivering innovative, integrated safety systems for both on-and off-road commercial vehicles.

Bumper to bumper, if it moves freight or a large number of passengers, there's a good chance *Safety Co.* designed and manufactured products help make it safer to operate.

Given that profile, *Safety Co.* may seem like an unlikely place for Agile to take hold.

While its true they experienced learning curves, they have seen significant results.

Safety Co. is in the midst of a transformation that is delivering positive outcomes and business agility. The effective use of a dual-operating system is a driving force behind this transformation.

Dual-operating systems capitalize on the strengths of both Agile and traditional management. This model incorporates both the speed and creativity of Agile 'networks' and the predictability and repeatability of traditional 'hierarchy'.

Implementing an effective and efficient dual-operating system requires more than just listing delineated responsibilities for the hierarchy and network. Both components must have established interaction points that ensure coordination and alignment. Without these 'known stable interfaces', the two sides of any dual-operating system will clash.

Safety Co. implemented the Scrum@Scale framework to ensure both sides of their dual-operating model work in concert to drive both the transformation and the company forward.

02 Background

Section Summary:

- The fact that *Safety Co.* operates in a highly regulated industry added to the complexity of the transformation.

- The company needed to ensure all quality standards and regulatory requirements were met and fully documented.

- *Safety Co.* saw the Scrum@Scale framework as the best fit for its Agile network and as the best method for ensuring collaboration and alignment between the network and hierarchy.

In-Depth:

The core physics of commercial safety systems have changed very little over the 90-plus-year history of *Safety Co.* Yet the company's current catalog of products is barely recognizable from its early predecessors.

Software meshed with hardware is the norm.

The complexity of advanced driver assistance and commercial braking systems is exponentially greater than it was just a decade ago. Technology continues to rapidly change. These two factors combined create what *Safety Co.* President & CEO and others refer to as the technology vortex. "It wasn't that we were just seeing a lot of change," says the CEO, "we had to reinvent the world."

Safety Co. has always been driven by a culture of innovation and problem-solving. Senior leadership began looking for ways to achieve business agility and turn change into a competitive advantage.

The company was already employing lean manufacturing techniques. It also had some teams using Scrum. Both showed positive results.

But there was no purposeful scaling structure in place.

Rather than retrench and redouble company efforts using traditional means, leadership decided to implement an Agile transformation that would incorporate a dual-operating model.

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>
> *– Safety Co. President & CEO*

The fact that *Safety Co.* operates in a highly regulated industry added to the complexity of the transformation. The company needed to ensure all quality standards and regulatory requirements were met and fully documented.

Safety Co. saw the Scrum@Scale framework as the best fit for its Agile network and as the best method for ensuring collaboration and alignment between the network and hierarchy. *Safety Co.* then partnered with Scrum Inc. to make it a reality.

03 Understanding the Dual-Operating System
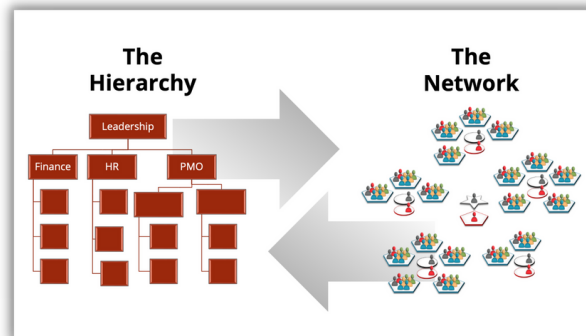
As defined by John Kotter in his book **XLR8**, a dual-operating system incorporates both the hierarchy (the traditional ways of working) and the network (the new Agile ways of working) until organizational change reaches a self-sustaining state of change, or, in this case, Agility.

In this model, each operating system focuses on its inherent strengths.

The hierarchy excels with the institutional functions that keep the business running. These functions vary from organization to organization but often include:

- Human resources and finance
- Raising capital
- Sales and marketing
- Large-scale supply chain and logistics
- Leveraging economies of scale
- Training and development

However, the nature of the hierarchy leads to a bureaucracy that prioritizes the status quo at the cost of innovation, speed, and value delivery.

As Kotter wrote in **XLR8**:

"Any company that has made it past the start-up stage is optimized for efficiency rather than for strategic agility—the ability to capitalize on opportunities and dodge threats with speed and assurance."

In contrast, the network is optimized for strategic agility. Its quick feedback loops, iterative approach, **minimum viable bureaucracy**, and effective information radiators allow it to capitalize on opportunities and excel at innovation, speed, and value delivery.

The network starts as a pilot project or program. Initially, as Kotter puts it, the network and the change it represents are driven by a guiding coalition and supported by the hierarchy. This provides time for the Agile transformation to be rolled out and customized to best fit the context of the organization itself.

Driven by the vision for success and a burning platform for change, and through invitational leadership, a small group of volunteers grows into a **volunteer army** of participants. This is when change takes hold.

The reach and effectiveness of the network grows. This approach also allows for continued improvements in the hierarchy which may see the adoption of aspects of Agile methodologies.

This transition happens over time and only after the benefits of organizational agility are empirically - and repeatedly - demonstrated.

3.1 Three Unique Features of Scrum@Scale

The ability to thrive in the rapidly changing and complex market was the driving force behind the Agile transformation at *Safety Co*.

Product and process improvements were needed to address this situation. The company needed to build the right things and build those things right.

The Scrum@Scale framework includes several unique features that differentiate it from other scaling frameworks. The option of starting with a small pilot is one such feature.

Once the pilot implementation has delivered proven, positive results, Scrum@Scale can then either spread organically or in a targeted manner depending on the needs of the organization. This 'land and expand' approach allows for greater customization, flexibility, and less disruption as the transformation progresses.

Scrum@Scale also creates the optimal conditions for enlisting a 'volunteer army' - an important factor identified by Kotter in his 8-step process for leading change. This group is made up of passionate individuals invited to help guide change.

Some may focus on a slow or burdensome process. Others on individual impediments. Or they can focus on the transformation as a whole.

Small pilots generate important learnings that can be used to inform, adapt, and accelerate the implementation going forward. Successful pilots create short-term wins, another important factor of change identified by Kotter. These wins generate the momentum that pushes the transformation forward.

Another unique feature of Scrum@Scale has to do with the level of creation of just enough guidelines and controls for the network itself. What the Scrum@Scale guide refers to as a minimum viable bureaucracy.

A rigid or overly prescriptive framework will stifle the ability of the network to innovate, create, and rapidly deliver value. It may not accommodate or be inviting to volunteers, which will limit your ability to scale the change with an effective organizational change model.

Too lax a framework and the business requirements of the hierarchy won't be met. Finding that middle ground, or minimum viable bureaucracy is an important step in any transformation. Implementing minimum viable bureaucracy also shows the organization's desire to adopt a scaling framework in ways that can be beneficial for the unique needs of your organization.

Here's how it is described in the **Scrum@Scale guide**:

A minimum viable bureaucracy is defined as having the least amount of governing bodies and processes needed to carry out the function(s) of an organization without impeding the delivery of customer value. It helps to achieve business agility by reducing decision latency (time to make a decision), which has been noted as a primary driver of success.

The final unique feature of Scrum@Scale we're exploring in this case study has to do with how the network and hierarchy interact with each other.

The network is fast and creative. The hierarchy is usually slow and methodical. They have different mindsets, focus on different time horizons, and effectively speak different languages.

Each side of a dual-operating system has unique responsibilities. And each has areas they are accountable for. But simply delineating these accountabilities and responsibilities does little to create the environment needed for a dual-operating system to thrive.

What is needed are known stable interfaces where the network and the hierarchy can efficiently communicate, collaborate, and align. Scrum@Scale's **Executive Action Team** (EAT) and **Executive MetaScrum** (EMS) are two such known stable interfaces.

The EAT and EMS represent the two cycles in Scrum@Scale.

The EAT is accountable for process improvements, removing impediments, and the organization's transformation backlog. This makes it the ideal interface between the network and hierarchy functions like human resources and operations.

The EMS is accountable for product vision and prioritization. This makes it the ideal network-hierarchy interface for functions like finance and sales.

Other known stable interfaces often emerge as organizational agility matures.

These known stable interfaces act as translation layers between the network and hierarchy. They keep the organization aligned and spur collaboration and coordination in the dual-operating model. This also decreases the risk that the network and hierarchy will fight for dominance, which can derail an organizational transformation and even reverse gains made by the network. Eventually, these known stable interfaces increase the hierarchy's understanding of Agile practices enough that some traditional functions can become Agile themselves.
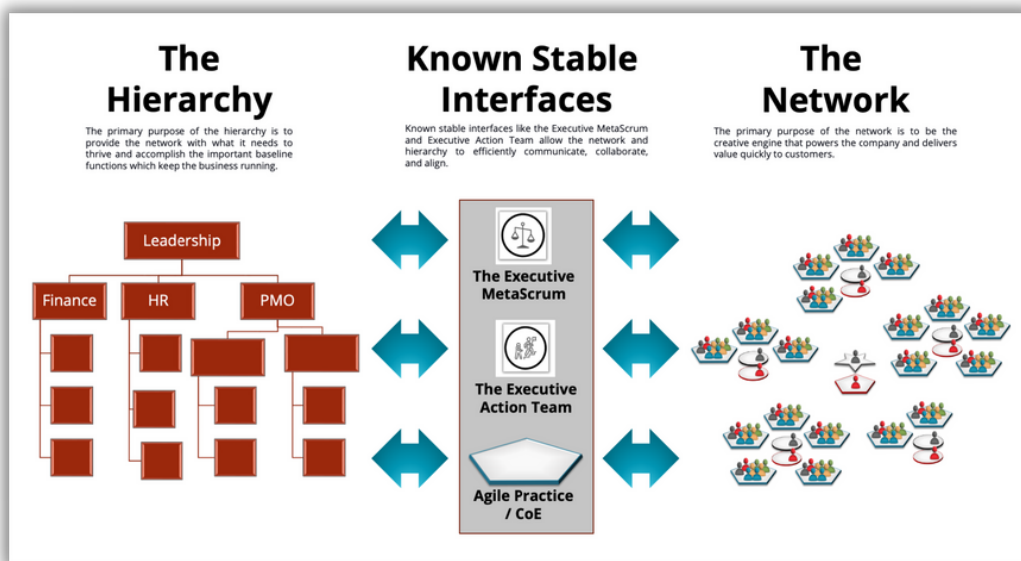
3.2 The Dual-Operating System at *Safety Co.*

At *Safety Co.*, the goal is to create an environment where both sides of the dual system continually work in concert. "I don't think one side ever fully replaces the other in a business like ours," explains the company's Director of Agile Practice. Both, he adds, provide value to the organization. Each in different ways. "The purpose of the hierarchy is to build great people, provide skills, guidance, and core central functions going forward."

Every large organization that has grown over time relies on a series of standard, repeatable processes to run efficiently. This includes functions like human resources, quality assurance standards, and other elements of core business operations.

In contrast, as the company's Director of Agile Practice explains, the network is the innovation side of the company. Where complex problems are tackled, new products are delivered, change is embraced, and value is rapidly delivered in regularly released increments.

Teams in the network must be cross-functional to become high-performing. At *Safety Co.*, this includes teams working in hardware and software. "There are also cases where we have brought central functions like manufacturing and purchasing into the network," says the Director of Agile Practice, "The network has to have full value stream capability. We realize teams can't fully deliver without it."

04 Defined Accountabilities:
The Hierarchy and the Network at *Safety Co.*

Section Summary:

The primary purpose of **the hierarchy** is to provide the network with what it needs to thrive and accomplish the important baseline functions which keep the business running. At *Safety Co.*, these processes or functions include:

- **Finance**
- **Resource planning**
- **Human resources and career development**
- **Hiring and onboarding**

The primary purpose of **the network** is to be the creative engine that powers the company and delivers value quickly to customers. At *Safety Co.*, these processes or functions include:

- **New product development**
- **Product management**
- **Project delivery teams**
- **Engineering research and development**

In-Depth:

Anton, the Vice President of *Safety Co.*'s Agile Project Management Office, has been at the company for more than 25 years. During that time he served in a range of leadership roles including President of their joint venture and a now wholly owned subsidiary, and as Mexico Country Manager running the organization's multi-plant in-country manufacturing operations.

Currently, Anton also serves as the Product Owner of the Executive Action Team (EAT) and Scrum Master for the Executive MetaScrum (EMS).

He speaks in frank, clear terms. "I could read a book and get the facts," he says, "but applying those facts to how we live is different." This is why, Anton says, he likes to use the terminology of "where things live" when it comes to establishing the responsibilities of the hierarchy and network.

4.1 What Lives with the Hierarchy

The primary purpose of the hierarchy is to provide the network with what it needs to thrive and accomplish the important baseline functions which keep the business running.

Anton considers the hierarchy the structured side of the company. All defined, repeatable processes that are necessary to drive a large, structured company that produces safety products are functions that live within the hierarchy. This is a proven pattern for success with the dual-operating system model.

At *Safety Co.*, these processes or functions include:
- **Finance**
- **Resource planning**
- **Human resources and career development**
- **Hiring and onboarding**

The hierarchy is also home to regulatory compliance functions in addition to sales, marketing, inventory, and operations planning according to the company's President & CEO. "I still need to be able to run a business in a more traditional way. This lends itself towards a dual-operating model."

4.2 What Lives with the Network

The primary purpose of the network is to be the creative engine that powers the company and delivers value quickly to customers.

In contrast to the hierarchy, Anton sees the network as the dynamic side of the company. "This is where our complex processes come together to deliver a product."

The network is the half of the dual-operating system that innovates, tests hypotheses, gathers feedback, and uses that feedback to inform the hierarchy so that it prioritizes, plans, and makes empirical decisions.

At *Safety Co.*, these processes or functions include:
- **New product development**
- **Product management**
- **Project delivery teams**
- **Engineering research and development**

Another feature of the network at *Safety Co.* is that it is largely comprised of teams and functions which changed their ways of working voluntarily. *Safety Co.*'s President and CEO sees "an understanding that we have to try something different because we have proof that what we have done in the past no longer works," as the tipping point and accelerator for change.

05 Interaction Points in the Dual-Operating System

Every effective dual-operating system relies on a symbiotic relationship between the network and hierarchy. As Anton, the Vice President states, "you can't have one without the other."

Yet to truly function in a collaborative way, a dual-operating system needs more than just a list of clearly delineated accountabilities. It requires a bridge or structure with established and reliable interaction points where the hierarchy and the network unite. As the President and CEO states, "it is vital."

For maximum agility, you really need interaction points that focus on the product and the process. This is one of Scrum@Scale's unique strengths.

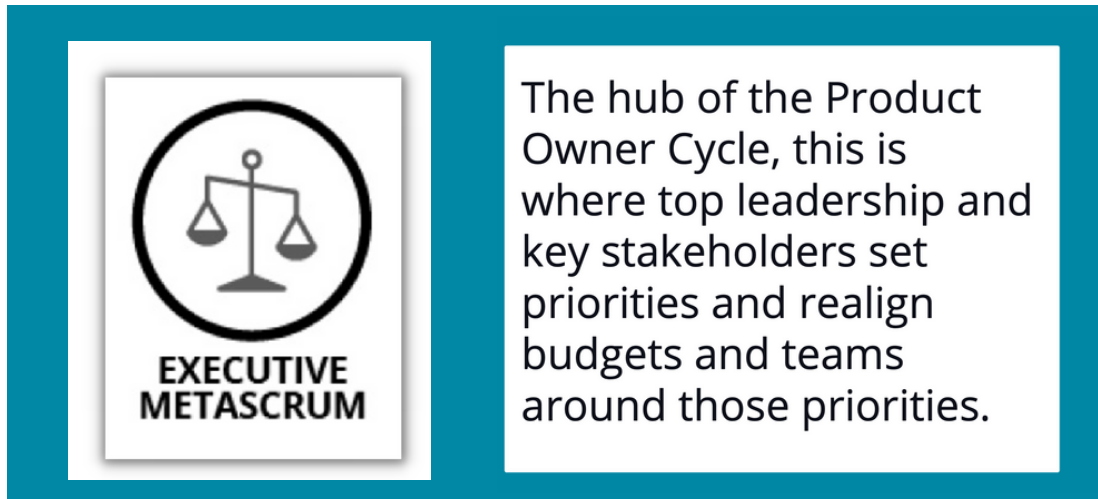## 5.1 The Executive MetaScrum (EMS)

Section Summary:

- Prioritization and maximizing value delivery are the primary goals of the Executive MetaScrum at *Safety Co*.

- This benefits the network by providing alignment to the top of the company on what the focus should be for each team

- This benefits the hierarchy by connecting the alignment into the core central functions like HR and Finance to ensure staffing and budget

In-Depth:

The Executive MetaScrum is the hub of the Product Owner cycle in Scrum@Scale. This is where top leadership and key stakeholders set priorities and realign budgets and teams around those priorities.

Like its process-focused counterpart, the Executive Action Team, the EMS is a known stable interface and translation layer which enables the dual-operating system to function optimally.

The hub of the Product Owner Cycle, this is where top leadership and key stakeholders set priorities and realign budgets and teams around those priorities.

The Executive MetaScrum at *Safety Co.* includes:

- **The company's President and CEO**
- **The vice president of each of the company's product groups**
- **A high-level representative from finance**
- **The Vice President of Sales**

A member of the Executive Action Team acts as the Scrum Master for the EMS. This helps to ensure organization-wide alignment.

The goal of any EMS is to maximize the delivery of value for both customers and the organization.

Safety Co.'s Director of Agile Practice believes that transforming a traditional organization into an Agile enterprise requires the network and hierarchy to have a simple interface where informed decisions can be made quickly. "Each member of the EMS owns some portion of the company's P&L," he says, "as a group, they have the authority to start or stop work on any project or product and rebalance funding as needed."

This reduces decision latency, a key contributor to product or project success.

Not only were decisions made faster, but the Director of Agile Practice says they were also more informed. "The EMS was able to look at the data gathered by the network's short feedback loops. Combining that with their understanding of the core requirements and functions of the hierarchy allows the EMS to make empirical decisions and quickly align the organization towards projects with a higher return on investment."

By having a clear and efficient known stable interface between the network and the hierarchy, one that includes those empowered to make these decisions and is focused on the product, both sides of the dual-operating system at *Safety Co.* become aligned and can act to optimize value delivery.

5.2 The Executive Action Team (EAT)

Section Summary:

- The average cycle time for tactical impediment removal by the Executive Action Team at *Safety Co.* is 3 days, though many impediments are removed within 24 hours

- This benefits the network by providing quick action so short-term goals can be met

- This benefits the hierarchy by providing transparency quickly to systemic issues that need to be addressed by changes to policies and procedures

In-Depth:

The EAT is the hub of the Scrum Master Cycle which focuses on process improvement and implementing the Agile transformation. This team acts as both the hub of the Scrum Master Cycle in Scrum@Scale and the guiding coalition as defined by Kotter. As such, the EAT is commonly the first scaled team created when an organization implements the Scrum@Scale framework.

To be effective, an EAT must be comprised of empowered individuals from different functions with the political and budgetary authority to act without needing to first seek permission. The responsibilities of the EAT include:

- Removing impediments that cannot be removed by individual teams or members of the wider network (such as the Scrum of Scrums)
- The implementation of the Scrum Values
- Assuring the Scrum Artifacts and their associated commitments are generated, made transparent, and updated throughout each Sprint.

EXECUTIVE ACTION TEAM

The hub of the Scrum Master Cycle which focuses on process improvement and implementing the Agile transformation.

The Executive Action Team is effectively part of the network. However, at many companies like *Safety Co.*, the EAT includes members of both the network and the hierarchy including:

- **The leader of Project Management**
- **Vice President of Quality and Manufacturing**
- **Vice President of Purchasing**
- **Vice President of Human Resources**
- **A leader of engineering**
- **An Agile specialist and coach**

By combining cross-functionality, empowered decision-makers, and representatives from both the network and the hierarchy, the Executive Action Team efficiently acts as a known stable interface, or translation layer, between the network and any part of the organization that is not Agile. *Safety Co.*'s Director of Agile Practice says this is a key driver of the company's successful dual-operating system and overall transformation.

With its focus on process improvements and close collaboration with both sides of the dual-operating system, the EAT at *Safety Co.* was able to help formulate the guidelines and procedures - the minimum viable bureaucracy - needed to ensure the network and the hierarchy can operate in concert.

Then there is the EAT's ability to remove impediments - the barriers to getting work done.

Quality, productivity, innovation, and time to market all improve when impediments are identified and quickly removed. "That is absolutely critical," says the Agile Practice Director.

06 Results

When asked if the dual-operating system is having a positive impact on his company, *Safety Co.* President & CEO quickly answers "Yes." The ability, he adds, "to pull the entire organization to the same intent, same view, the same goal I think was only possible because we had these new tools and this new method that we've adopted."

Other positive results throughout *Safety Co*. include:

- **On-time delivery** of product development projects **increased by 40 percent**

- **Team output (velocity) increased by 43 percent**. However, some teams velocity jumped by 300 percent

- **Cross-functional skill sets** of each team versus the total skill sets needed to deliver working product **increased by 20 percent**

- **Roughly 80 passionate individuals** now make up S*afety Co*.'s growing **volunteer army**. These volunteers are empowered to improve efficiency and value delivery, identify and help remove systemic impediments and organizational debt, and act as change champions who accelerate the transformation and its implementation

The successful implementation of a dual-operating system with Scrum@Scale at *Safety Co.* means the company continues to meet or exceed the rigorous testing, safety, regulatory, and other requirements for all its products.

6.1 Prioritization

Like any organization with a large client list and a highly dynamic technology environment, *Safety Co.* had a long list of priority projects. The problem was how long that list was.

Organizational priorities are now set at the Executive MetaScrum, one of the interaction points between the network and hierarchy at *Safety Co.*

The discussions aren't always easy -- prioritization never is. Ensuring empowered stakeholders from both the network and hierarchy are participating in these discussions allows for tough but productive agreements to be reached.

For *Safety Co.* this means:

- The **number of priority products** has been **cut roughly in half**
- **On-time delivery** of projects has increased by **23 percent**
- **Return on Investment** of active projects has **increased by 24 percent**
- **All priority projects** have been approved to be **fully staffed and fully resourced**

As Anton, the Vice President of *Safety Co.*'s Agile Project Management Office states, "If you can't get your executives to agree between themselves, how will you get the rest of the organization on board?"

6.2 Better Budgeting

This ability to rapidly rebalance investments in an efficient, data-driven manner, allows Safety Co. to better capitalize on the changing needs of their customers. This, as the Agile Practice Director explains, can't always be done effectively using traditional financial standards like P&L or IFRS.

Take something as complex as determining the potential value of a strategic investment.

Here, Safety Co. uses what the Director calls an Agile business case. They start by giving each potential product or project a relative size (using Fibonacci numbers) determined by the expense Safety Co. would incur and the expected level of effort to complete it. The EMS can then compare the relative size to the projected revenue to determine the Net Present Value (NPV). But even NPV doesn't tell the whole story.

Sometimes, says the Agile Practice Director, "the net present value might be negative. But many of our systems are interconnected. So if we don't do a job, a customer may not buy other products from us." This too is weighed, "along with other factors that might affect the strategy."

6.3 Improved Alignment

A significant portion of the company's manufacturing functions live in the hierarchy. Most of the research, design and development functions live in the network. An ineffective dual-operating system could create silos of important information.

Here too the interaction points established in the EMS and EAT create beneficial outcomes for *Safety Co.* by breaking down those silos and increasing alignment across the enterprise.

Members of the hierarchy know when a newly developed product will be ready for production and plan accordingly. This interaction reduces the opportunity cost of downtime or needed retooling.

The benefits here have been significant enough that the company's President & CEO says he won't "go forward with a project unless both sides are aligned and fully staffed for that project." This, he believes, "has created a lot more confidence in the company and that we will be able to produce what we promised when we promised."

07 Future of the Dual-Operating System at *Safety Co.*

A network that includes Scrum Teams specializing in hardware and software, manufacturing, engineering, and design. A hierarchy is well-positioned to accomplish the core business functions that keep more than just the lights on. And a Scrum@Scale implementation that provides not just clear accountabilities, but efficient and effective ways for both sides of this dual-operating system to communicate, collaborate, and align.

Safety Co. has the dual-operating system that many organizations are eager to create.

As the network matures, its responsibilities evolve. Interactions between the network and hierarchy improve as the two sides of the dual-operating system interact and collaborate. Agile practices spread, even to some functions of the hierarchy.

Safety Co. is now seeing this play out.

The company's Director of Agile Practice points out that applying agility in the company's Sales and Marketing department improved their change management process, further enhancing customer satisfaction.

The Purchasing group is using Agile to reduce lead times, and the Operations team is finding and reducing bottlenecks. Human Resources is now better able to prioritize hiring for specific skills and needs in alignment with the priorities of the business.

Does all of this mean the transformation at Safety Co. is complete?

Not at all.

Safety Co. is a great example of continuous improvement in action and at scale.

Improvements in the network, hierarchy, and dual-operating system are still being identified and implemented. "We're still not as fluid as we need to be," says Safety Co.'s President and CEO, "But I am committed. Our next natural step is to make sure people are organized to succeed."

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Your partner for every stage of *Business Agility*

> " Scrum Inc. has the evidence-based experience to help us identify our company's current reality and guide our transition into that better state.
>
> *– Safety Co. President & CEO* "

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OUTCOME DRIVEN CUSTOMIZED SOLUTIONS

Curious how a dual-operating model with Scrum@Scale could help your organization?

Our Client Partnership Team is always happy to answer your questions. Schedule a consultation today - it's amazing how much can be accomplished in a short, 30-minute conversation.

Jade Morel
Product Owner
Client Partnership

Meet with Jade

Mark Rosania
Team Member
Client Partnership

Meet with Mark