The Full Circle Journey

Management System Design and Implementation

April 18, 2024

Mining Health and Safety Conference 2024

srk consulting

Talking Points

- Changing Safety and SMS Landscape

- Navigating SMS Standards

- Culture vs. Systems

- Importance of Fit-for-Purpose System Design

- Designing Maturity into Systems

- Concept of Diminishing Returns

- Organizational Demands on System Design, Implementation, Maintenance

- Be One with the System

srk consulting

The Landscape

Safety Management "Systems" in Mining – Early 2000s

How Safety Evolves

Low Performers   **Average Performers**   **High Performers**
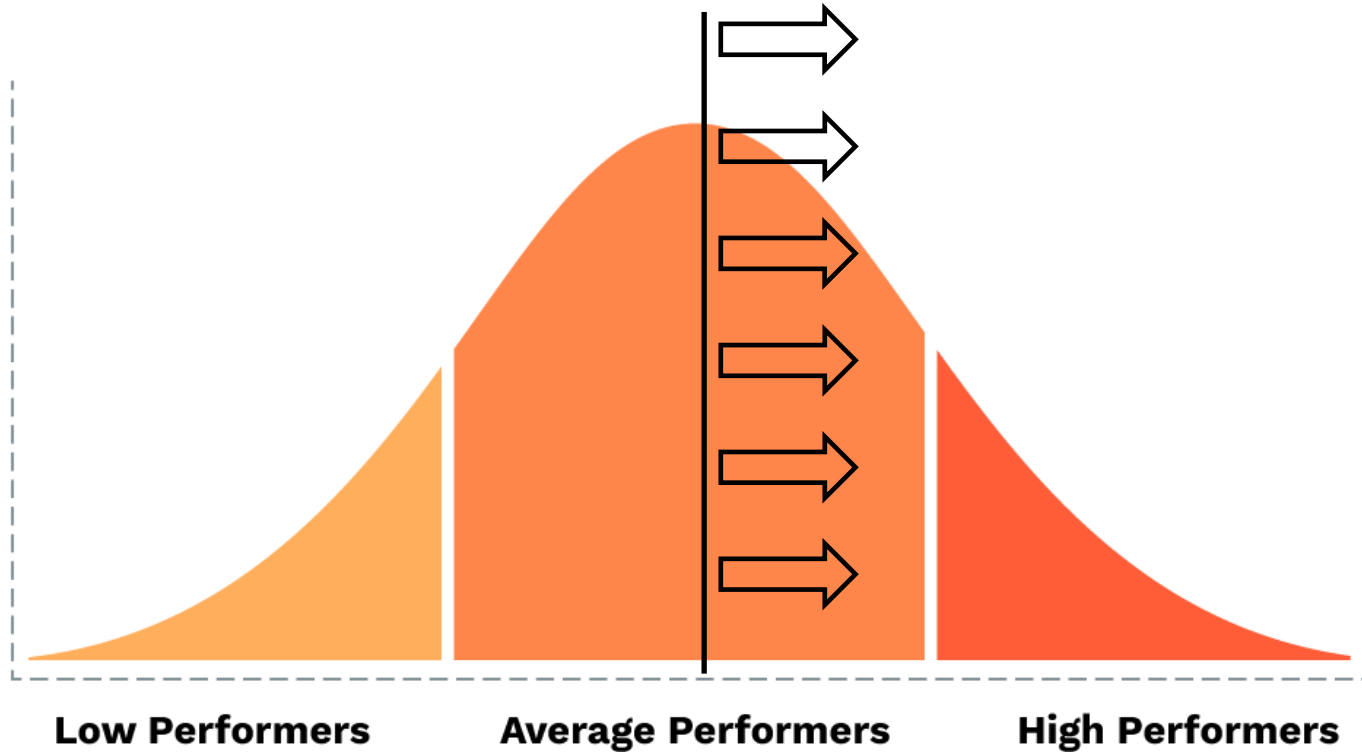
Common Themes

- Compartmentalized, simple procedures

- Stand-alone audits and inspections

- Lack of formal tracking, "loop closing", and escalation

- Limited resources – people, information, software

- Non-system thinking, lack of system-level procedures

- Lots of "flavors of the month" cause distractions

- Focus on lagging indicators

- Limited formalized risk assessment

srk consulting

The Mandate

- Top management decision

- Combined ISO 14001 + OHSAS 18001 Management System

- 3 operating mines, extensive surface exploration program

- 1000 employees + contractors

- 12-month timeline

The Journey Begins

- Consultant

- Budget

- Management commitment

- Software + infrastructure

- Allocate internal resources

SMS Design Lifecycle

- Define context, scope of SMS

- Outline framework for documentation

- Identify legal requirements (register)

- Identify, assess risks

- Develop documentation

- Set objectives and targets, management review

- Training – roles, general awareness

- Implementation, data collection

- Improvement model, planning

ACT | PLAN | CHECK | DO

srk consulting
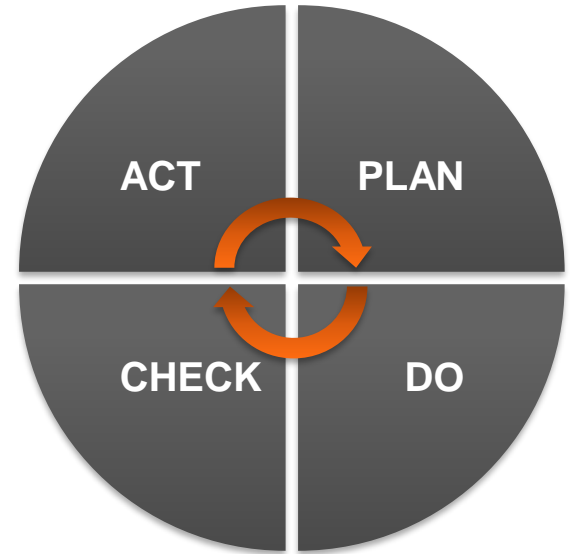
Reflection

- Aggressive timeline wasn't aligned with the current culture / landscape

- Effort towards making sure boxes were checked

- Development / implementation done in more "manageable" chunks would have been easier, better received

- We didn't allow much flexibility within in our SMS framework (time + understanding)

- End users didn't understand the intent of the project

SMS Design Philosophy

Make it Fit-For-Purpose

srk consulting

The Journey Continues

- Oh boy, 2008!

- Just experienced a full-blown SMS design and implementation process

- Understood the landscape

- Felt ahead of the curve

- Had take-aways

srk consulting

SMS Standards

Several other SMS standards emerged and continue to do so.
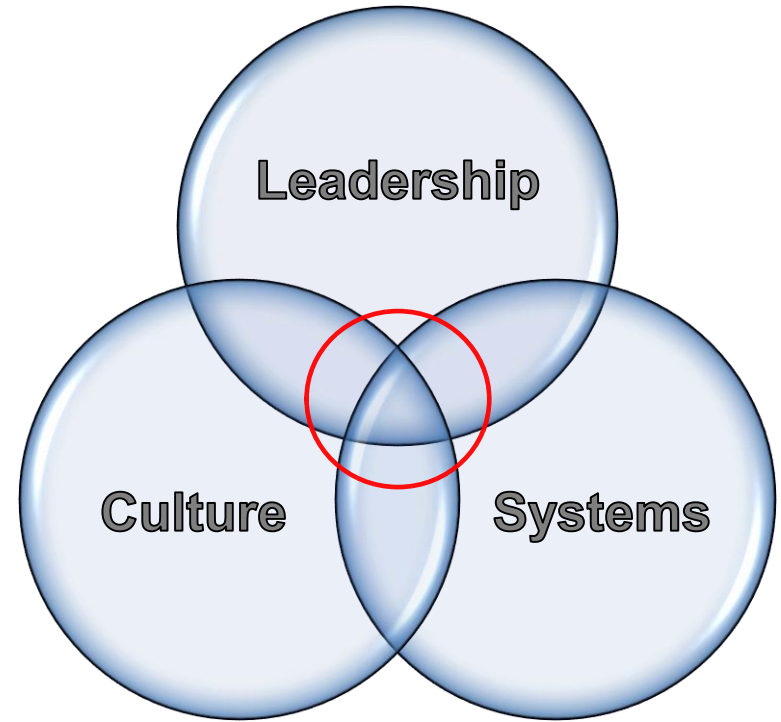
Considerations:

- Is the SMS Standard suitable for your organization / industry?
- What is your motive for choosing a particular SMS Standard?
- Can you predict the amount of work / cost that will be involved?
- Are you just trying to gain a certificate? Why?
- Is it right for your current culture?

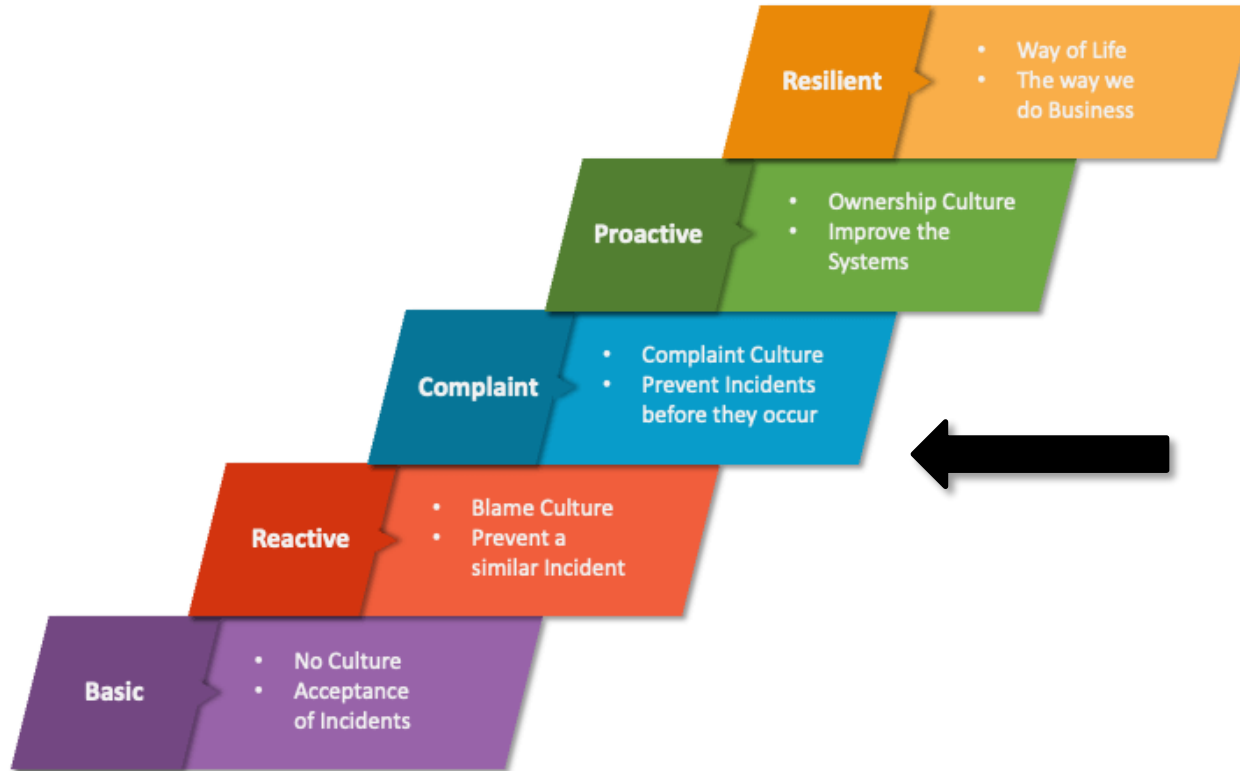**srk** consulting

Culture vs. Systems

Three main pillars of safety:

- Leadership

- Culture

- Systems

Organizations want systems to help improve culture, but the culture dictates the level of challenge you will face when developing and implementing your SMS.

Leadership

Culture

Systems

srk consulting

Safety Culture Maturity

Resilient
- Way of Life
- The way we do Business

Proactive
- Ownership Culture
- Improve the Systems

Complaint
- Complaint Culture
- Prevent Incidents before they occur

Reactive
- Blame Culture
- Prevent a similar Incident

Basic
- No Culture
- Acceptance of Incidents

srk consulting

Risk Management is the Cornerstone

- Good management systems should be risk-based

- **Effective** risk management will yield strong performance results

- Conversations shift to managing risks

- Risk management becomes part of business decisions

- Change management is tied back to risk assessment

- Risk management activities produce a lot of data that is used for metrics, system improvements, objectives and targets, etc.

srk consulting

Not All Risks are Equal

- Some SMS frameworks require a similar amount of effort for all risks

- Your methodology should allow a dynamic approach

  - Qualitative vs. quantitative

  - Various tools, methods

  - Complexity of control strategies

  - Internal communication, programs

- This also hinges on culture

SIF	SIF	SIF

High-Med	High-Med	High-Med	High-Med

Low	Low	Low	Low	Low	Low

srk consulting
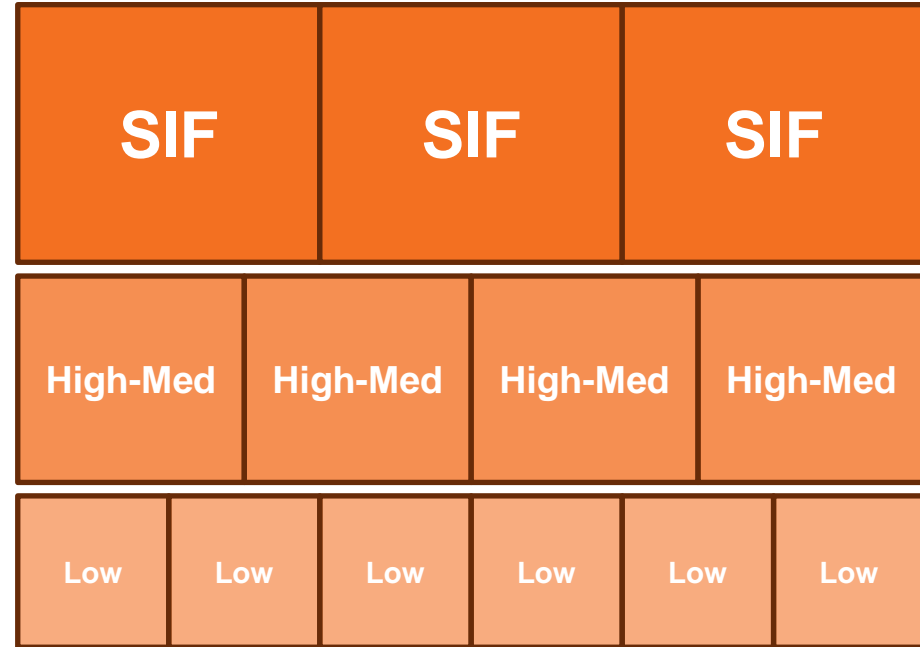
Interpreting Fit For Purpose

Fit-for-purpose solutions are often a better early-stage approach to implementing an SMS.

- Understand the basic framework for how you wish your SMS to function
  - You can loosely base your SMS design around an existing standard, or elements from different standards
- Identify where your focus areas should be
- Allows for flexibility in design and rollout
- Fits the organization
- Where do you want your SMS to be in one year? In 2+ years?
  - How will you get there?

srk consulting

System Maturity

Systems should mature over time. You should gauge your starting point and look to the future.

- Addition or strengthening of SMS elements

- Expanded scope

- Reduction of non-value-added activities

- Increased or decreased complexity

Setting objectives and targets (SMART) is the best way to build maturity into your system.

Objectives and Targets

A good SMS will involve the continual setting of objectives and targets. Setting objectives and targets each year allows for SMS growth while also satisfying requirements of the SMS.

- DO NOT focus strictly on improving lagging indicators – If you do, what tangible steps will help you get there?

- Use data being collected to help determine focus areas

- Examine shifts in culture and gauge what you are ready for

- Build a strong case for management

srk consulting

Diminishing Returns

What is your actual return on investment?

srk consulting

Your Investment

- Time + resources

- Money

- Reputation

srk consulting

Return on Investment

- Big focus on lagging indicator performance

- Other considerations

  - Better employee engagement

  - Cultural shift

  - Better management of risk

 - System element improvement

  - Useful data

  - Buy-in

Lagging Indicator Performance

Injury Frequency

Time

srk consulting
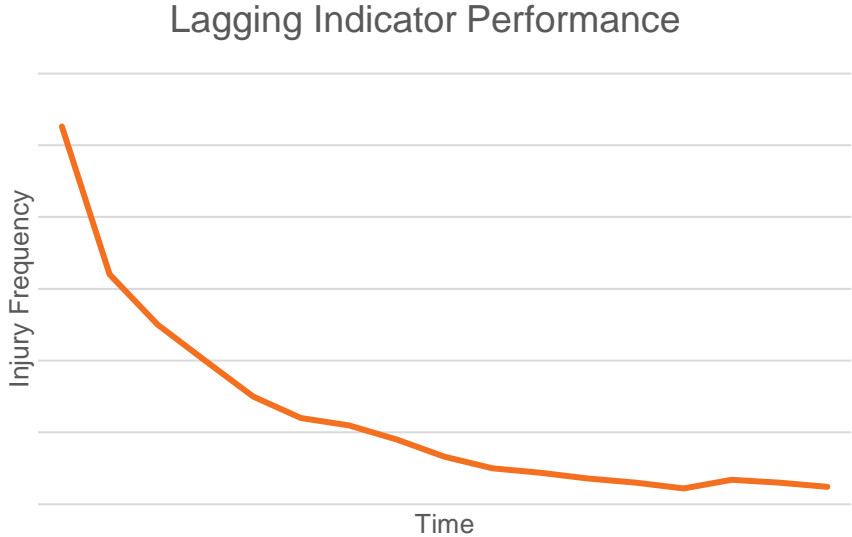
Administrative Demands

- Top management
- Middle management
- Front line supervisors
- Workers and contractors

srk consulting

Diminishing Returns

- Improving lagging indicator performance becomes harder over time

- Administrative tasks can prevent focus on the right things

  – Less time in the field

  – Chasing SMS compliance

- Even more individual effort is required to stay the course

Lagging Indicator Performance

EFFORT

Injury Frequency

Time

srk consulting
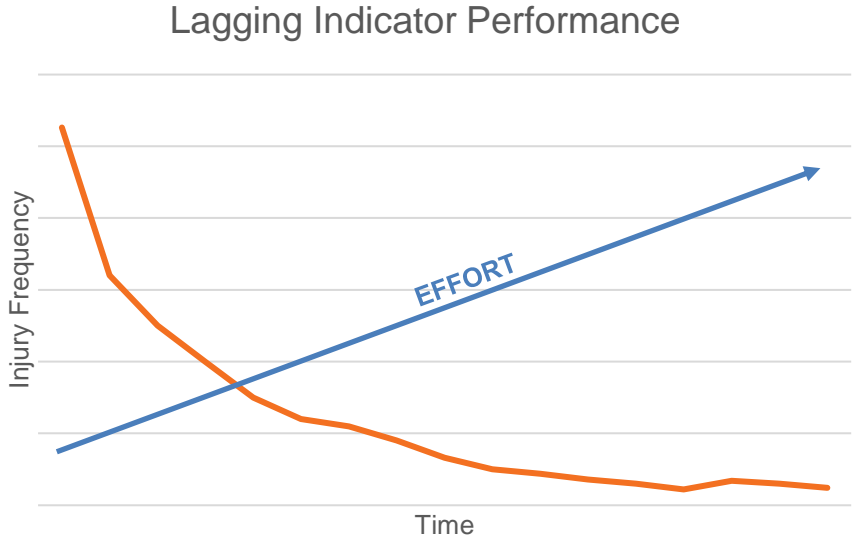
Managing Risks

Does/will your SMS require you to incorporate new "top risks" each cycle?

- Same level of effort?

- Maintenance activities on previously risks / control programs?

- When does this become an administrative exercise to ensure SMS compliance, or retain certification?

SIF	SIF	SIF

High-Med	High-Med	High-Med	High-Med

Low	Low	Low	Low	Low	Low

srk consulting

Design Criteria, Ready to Go

All things considered…

- Decided on a scope and framework

- Understand overall goals

- Confidence in the project

- Management and team endorsement

- Culture, resources and infrastructure understood

Design, implement, audit, maintain and improve (P-D-C-A)

srk consulting

Be One with the System

You've designed and implemented your SMS, now what?

srk consulting

The Journey Continues

- Analytics

- SMS auditing

- Culture assessments

- Further SMS development

srk consulting

Common Problems

- SMS still viewed as a standalone element of the overall safety program

- Not well-communicated to stakeholders, end users

- People leave, lack of planning

- People feeling bogged down by paperwork, compliance reporting

- People find ways to strictly "stay compliant" with SMS requirements

- Leading indicator metrics distract focus – measured quantitatively, not qualitatively

srk consulting

Data Analytics

The SMS can produce a lot of data, it is important to identify / maximize its usefulness.

- Areas of focus

- Objectives and targets

- SMS compliance and administration

The "keeping boxes checked" or "maintaining certification" mentality is harmful.

Safety Management

A safety management system is system for managing safety.

- It's not a manual, it's not a policy, it's not a singular activity
- It should not be considered a stand-alone element
  - All elements should be incorporated into the system (e.g. A&D Testing)
- Well defined roles, responsibilities
- Strong communication at all levels
- Data analytics
- Desire to make improvements

srk consulting

Closing Summary

- Plan your project well with reasonable timelines

- Certification should be a reward, not a short-term goal

- Design the right system for your organization

- Focus energy in the right places, maximize investment

- Plan for system maturity by setting achievable objectives

- Think long-term success

- Use data analytics to help stay focused, make improvements

Thank You. Questions?

srk consulting