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What separates the top-performing chemical, oil, gas, and related companies from the rest?

IN ONE WORD, SUSTAINABILITY. Without sustainability, a company may have a streak of strong quarter-over-quarter growth. But that ultimately ends, sometimes spectacularly. Financial decline is also precipitated by causes other than process safety incidents. However, declines frequently involve the same kinds of leadership and management system failures that precipitate process safety incidents.

Sustaining a high level of process safety performance leads to numerous benefits. Benefits appear in top line revenue, bottom line profit, cash flow, company valuation, and stock price. This requires leadership – the kind of strong, felt, leadership that benefits other business areas as well.

This, in short, is the fundamental Business Case for Process Safety. *A comp (1 k/GS17.6 (i)14.2 (s)2.5 ((r)-23 pr) - (l)6.5T)JT180-2 (-1.4 TD(B.3)n7.2 (e)*



A BUSINESS CASE for process safety should not be necessary. The need to protect workers, the community, and the environment is as obvious as the need to protect market share, provide & protect shareholder value, and make payroll. But with the many daily demands of business, the obvious can sometimes be left behind. When a company leaves process safety behind, they miss significant financial and organizational benefits described in this publication.

This benchmark survey of CCPS member companies, combined with data from other sources, provides conclusive evidence that methodically implementing process safety delivers five benefits that help the company to sustainability. These benefits range from quantitative to more qualitative, and from value creation to cost reduction.

The Benefits

1. Corporate Social Responsibility

Process safety helps make a company more attractive to employees, communities, governments, insurers and investors. This opens the door to the second benefit...

2. Business Flexibility

Companies considered welcome by communities and governments can expand and evolve with fewer social or political barriers. Equally important, major incidents can sap human and financial resources that could otherwise be focused on growth. Process safety helps give companies the ability to determine their own future by avoiding them.

3. Loss Prevention

Any major process safety incident results in an obvious direct financial loss. However, losses can extend beyond onsite and offsite damage and injuries. Especially with severe incidents that cause property & environmental damage, companies can suffer adverse financial losses including cash shortfalls, sometimes forcing asset sales often at significantly below their value.

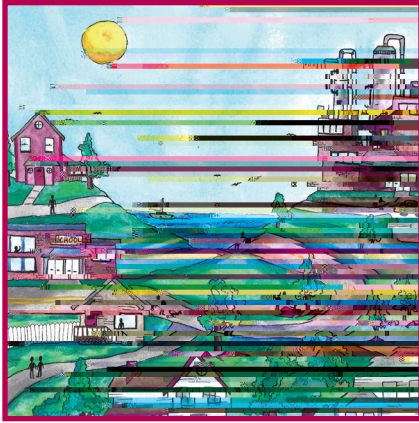
4. Sustainable Growth

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PROCESS SAFETY is a management system which controls a wide range of operational, cultural, and technical activities essential for preventing incidents involving hazardous materials. It applies wherever chemicals, oil, gas, or combustible dust are produced, handled or used.

There are process safety management systems (PSMS). Some are based on regulations, some on guidelines or standards, and others internally developed by companies. All require the basic features identified in the CCPS Risk Based Process Safety Management System approach.

Companies should implement a PSMS to ensure that its processes meet the



BENEFIT 1
CORPORATE
SOCIAL
RESPONSIBILITY

Sustainable companies are socially responsible. Process Safety plays a leading role.

PROCESS SAFETY helps make a company more attractive to investors, employees, communities, governments, and insurers. Maintaining a strong process safety commitment over time tells critical stakeholders that you care about them and your employees, and that you are managing the company well.

These benefits reflect directly in the primary measurement of a company's valuation – share price. A review of 12 recent major accidents in 4 countries and 4 industry sectors shows the impact of these accidents on share price.¹ In all cases, after accidents, share price immediately begins to drop relative to the market and may continue for a year or more. Following the Bhopal disaster in 1984, Union Carbide's stock dropped continuously relative to the market for 15 years.

The decrease in share price includes losses well beyond the tangible losses alone. The difference, simply put, is shareholder perception. Nearly every stock is priced well above the value of its tangible assets. This premium reflects the confidence of investors in the company's ability to manage, control risk, innovate, and continue to grow sustainably. Practices for showing this premium on balance sheets vary. In some cases, terms such as Intangible Assets or Goodwill reflect all or a portion of this premium.

This shareholder confidence premium is built – or destroyed – by factors directly linked to process safety:

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Process safety removes barriers to growth.

COMPANIES that manage process safety effectively earn the flexibility to freely manage their businesses and grow profitably, while satisfying all stakeholders; local communities, the public, regulatory authorities, governments, investors, and customers. Business flexibility results from earning the trust of the public and especially of the local community. It is your company's license to operate. This analogy is complete in the sense that, as with any license, those who award it can also revoke it.

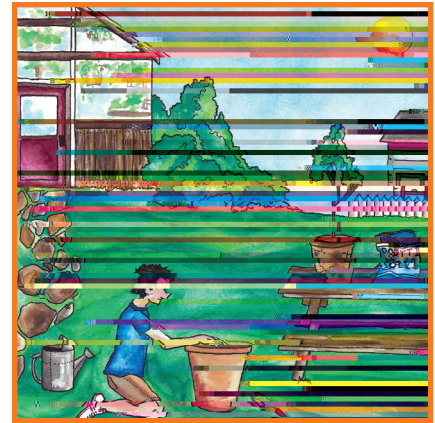
Every incident represents a lost opportunity, because, the company must divert resources to investigation, clean-up, and recovery, as well as legal and regulatory challenges. These resources could otherwise be focused on growth.

Major incidents can also significantly drain available cash. This can force companies to sell valuable assets, often at a fraction of their value - another lost opportunity. Moreover, in many cases it can lead to the loss of the company and the livelihoods of every employee.

Flexibility benefits a company by:

- Allowing managers to focus on growth and productivity, rather than damage control and recovery
- Protecting cash flow from unexpected disruption
- Proving your worthiness to hold a license to operate
- Strengthening and maintaining good relationships with the local community; and
- Helping you obtain approvals for expansion permits or new facilities more quickly – a critical strength when implementing the new projects needed to compete effectively.

A major incident can also weaken a company's ability to respond to competitors'



“Excellence in process safety enables us to enter markets and manufacture products faster, and it makes us even stronger in terms of reliability, which has been a historical Eastman advantage. As a specialty materials company, speed and reliability are integral to the success of our overall corporate strategy.”

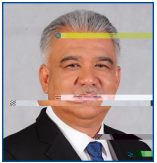
DAVID GOLDEN

Senior VP

Chief Legal & Sustainability Officer

Corporate Secretary

Eastman Chemical Company



“PETRONAS has benefitted greatly from integrating our process safety management

system into our principles of operational excellence in driving business sustainability. We focus on improving operational discipline and asset integrity across the group to prevent major process safety events. Continuous improvements are vital. By leveraging on collaborations with our stakeholders, we can raise the bar of Process Safety Excellence in all that we do.”

DZAFRI SHAM B AHMAD
VP, Group HSSE

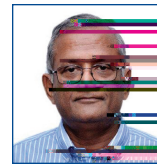
Process Safety Leadership and Management Systems lead the way to operational excellence.

COMPANIES around the world have learned that when they implement robust process safety management systems, their productivity and quality increase while costs decrease. The reasons should be obvious. Process safety leadership requires you to:

- Understand your process better – normal operation and what can go wrong

- Improve process development and front-end engineering design

- Follow procedures





Process safety requires – and develops – strong leaders.

COMPANIES increasingly organize their operations management and leadership activities in an integrated management system called, among other names, operational excellence. A closer look at these management systems shows that operational excellence depends on executing the core principles of process safety with dedication and professionalism.

BENEFIT 5 LEADERSHIP EXCELLENCE



“Process safety has been a key element of my personal leadership development and is now an element of new leader reviews at Arkema. In today’s environment when “safe enough” cannot support a sustainable business model, it’s excellence in leadership that develops resilient organizations to move us to the next level.”

PAUL LEONARD
Vice President HSE
Arkema Group

In an ever more competitive global business environment, companies need visionary leaders who rigorously manage the details. Process safety requires everyone to actively lead, which helps prepare employees for future leadership roles. And since process safety touches so many operational and technical roles, it helps produce an ever-growing cadre of leaders and managers to drive the future of the company.

Just as process safety protects the company against losses from major incidents that can threaten the sustainability of the company, it can also offer protection against other losses – of efficiency, trust, environmental quality, product integrity, and many more.

Process safety role dimension	Leadership skill required and developed
Set meaningful risk reduction targets, communicate, and obtain buy-in	Vision and inspiration
Establish risk criteria and metrics to	Showing the way

As the person
accountable
for drilling and
completions at
Chevron, I make
well control my primary process
safety focus. I must understand
and prioritize the process safety
risks that exist throughout my
organization. I must be familiar
with the safeguards in place to

In summary, the business case for process safety is like the business case for any other aspect of the business. A robust process safety management system operating in a robust culture will enhance your business in five ways, all driving improved profitability and shareholder value:

Realize the Benefits

Nine steps to achieving business excellence through process safety management:

Leadership Action Checklist	Doing
Commit and take accountability among your company's leadership and board of directors.	<input type="checkbox"/>
Establish risk criteria and ensure barriers are implemented and maintained sufficiently to meet these criteria.	<input type="checkbox"/>
Build or close gaps in your process safety management system.	<input type="checkbox"/>
Assign responsibilities at the corporate, business, and facility levels for coordinating and executing the process safety management system.	<input type="checkbox"/>
Build or strengthen a strong process safety culture based on core values and clear performance expectations.	<input type="checkbox"/>
Ensure competency in process safety appropriate to all levels.	<input type="checkbox"/>
Implement goals and lagging and leading metrics to track them to drive performance improvement.	<input type="checkbox"/>
Visit your facilities to reinforce the importance of process safety.	<input type="checkbox"/>
Learn from incidents and near misses.	<input type="checkbox"/>



“At Chemours, we believe it’s not enough to consider safety a priority—even a top priority.

The stakes are too high. Safety must be an obsession—something we think about, teach about, and preach about every day. Whether it’s process safety or driver safety, safety must come first, everywhere, at all times.”

MARK VERGNANO
President and CEO
Chemours Company

This is not a one-time set of activities. To be sustainable, this commitment must also be sustained. Revisit these steps periodically and implement improvements based on lessons learned.

Media Description

The artist, Julia Eve Dubin, used watercolor to depict bright, sunny, natural scenes representing safety and health – of workers, the environment and the bottom line. The Business Case for Process Safety should become as natural as these scenes.

Image Descriptions

Corporate Social Responsibility: This image shows a prospering community living in harmony with the plant. When companies collaborate with their employees and their communities, all benefit.

Business Flexibility: A boy is repotting a growing sapling, representing an operating site that wishes to grow, into a larger pot. Its roots now unconstrained, the tree – and the site – can now expand, strengthen, and prosper.

Loss Prevention: This image illustrates preventing the loss of a newly planted tree by staking it up. Following the themes of the previous two images, the company (hardhat) cooperates with the community (no hat) to protect the tree (site).

Sustainable Growth: The tree (the manufacturing site) continues to grow. Having protected the tree in its early years and having removed its barriers to growth, the

CCPS offers more than a dozen courses and more than 100 books addressing all aspects of process safety. Some resources useful to business, operations, and technical leaders include:

Vision 20/20: A Guiding Vision for Process Safety

Courses and Workshops

- CCPS Leadership Workshop
- Process Safety Boot Camp
- Foundations of Process Safety
- Recognizing Catastrophic Incident Warning Signs Workshop

Books

- Process Safety: From the Boardroom to the Frontline (early 2019)
- Essential Practices for Creating, Strengthening, and Sustaining Process Safety Culture
- Guidelines for Risk Based Process Safety (2007)
- Guidelines for Integrating Management Systems and Metrics to Improve Process Safety Performance (2016)

For more information, and a complete listing of courses and books, visit www.ccpsonline.org or call +1.646.495.1371

If your company a CCPS Member?

You are encouraged to engage and benchmark with fellow members to help each other realize strong process safety programs.
You are also encouraged to join project teams to help shape future guidelines, another way to bring other companies' experience into your efforts.

If your company not a Member?

Please contact CCPS@tjg1k.com or call 1.646.493.9517

