

■ COMMENTARY

How accepting and managing errors can raise a firm's performance

By Michael Frese

MAKING mistakes and learning from them is integral to human culture. It is what made us successful as a species.

Our development is a repeated story of trying to do something new, making mistakes and then – crucially – trying to improve.

And history has given us countless quotes from the great and good on the creative potential unleashed by making mistakes. For example: "All men make mistakes, but only wise men learn from their mistakes," an insight attributed to Winston Churchill. "A life spent making mistakes is not only more honourable, but more useful than a life spent doing nothing," said George Bernard Shaw, while fellow Irish writer James Joyce described mistakes as "the portals of discovery". Prolific American inventor Thomas Edison, regarded as the father of modern innovation, is quoted as saying: "I have not failed, I have just found 10,000 ways that do not work."

The message from these is consistent: Learn from your mistakes. It is something we are told many times at a young age.

But how many of us actually take that through to adulthood and apply that to our working lives? Mistakes in childhood are often viewed as charming – something one might post a photo of on Facebook. They are a part of growing up. But in many areas of the business world, mistakes – let's call them errors – are often seen as something to be feared or shameful. A costly black mark on someone's career, or reflecting a lack of competence.

Indeed, the negative consequences of errors, for example the nuclear accident at Chernobyl or the loss of the space shuttle Challenger, tend to gather the most attention.

Perhaps this emphasis on the negative and a consequent widespread phobia of errors is the reason why many firms focus exclusively on a policy of error prevention.

In fact, almost all successful and ground-breaking innovations – from the lightbulb through to the iPad – have a backstory of errors that came before them. Penicillin, one of the most important medical discoveries of the 20th century, was developed as a result of a mistake in the lab, just one example of the positive effect of errors.

Indeed, as well as learning from our mistakes, we should in fact welcome them. Several academic studies have shown that firms learn more of business value from negative outcomes than positive ones. Rather than focus solely on eradicating errors, the lesson for firms is to embed within their culture ways to reduce the nega-



Victims of the Chernobyl nuclear disaster being remembered during a night service near the plant in the city of Slavutych, Ukraine in April. PHOTO: REUTERS

tive consequences of errors and enhance the positive, a process we call error management.

Error management culture

First, let us define what an error is.

In our case, we will define errors more specifically as "action errors". That is, errors that are unintended deviations from plans or goals, as well as incorrect actions resulting from lack of knowledge.

In 1492, for example, explorer Christopher Columbus departed from the Spanish port of Palos with the intention of sailing west, a mission he achieved. From a higher perspective though, his famous voyage can be categorised as an error because his objective had been to find a short route to India, something he rather spectacularly failed to do.

Errors are also different from inefficiencies, which achieve their goals, albeit with wasteful detours; and violations, which are an intentional breaking of rules.

My research over a number of years has focused on the impact of errors, and specifically of varying degrees of error management culture on company performance. We have avoided directly studying the impact on safety and disaster avoidance although it is plain that these may also benefit from error management.

A series of studies of medium-sized firms in Europe have shown that firms with a systematic approach to error management embedded in their organisation perform better.

Indeed, our findings show that, on average, firms we categorised as having high error management culture see approximately a 20 per cent higher return on their assets than those who do not.

This is not to say, of course, that firms who make more mistakes will be more profitable. Rather, that firms with a proactive and open approach to managing errors are likely to handle them better, be more inno-

vative and more productive.

A prerequisite to enhancing and emphasising this positive effect of errors is an acceptance that errors will happen and can never be completely eradicated.

This does not imply, we should stress, that errors should not be taken seriously, nor that error prevention is unimportant.

For managers, this undoubtedly involves walking a fine line, but it does mean there are strong business benefits to accepting that errors will occur, and approaching them in a pragmatic, open and constructive way.

Let's take the example of organisational culture demonstrated by this quote from a manager of a firm in one of our studies with low error management: "I don't want to discuss errors at length ... I indicated this shouldn't happen again and that was the end of it."

This approach emphasises all of the negative aspects of errors and none of the positives. By allowing no room for discussion, there is no room for learning. Errors are seen as inherently bad and there is no incentive for the firm's employees to try anything new.

By emphasising the negative, the only real incentive is for staff to try to cover up any errors – an outcome that not only negates any opportunity for learning, but which also opens the way to further inefficiencies like simply repeating the same error further down the line. It also makes delays in recognising an error more likely, increasing its potential impact and cost.

This implicit "blame" centred approach risks even more negative outcomes because no process is initiated to control or contain the damage.

On top of this, it is important not to overlook the emotional aspect – if errors are perceived as inherently negative or even catastrophic, then the individual's mindset will overshadow a rational approach to resolving the error in question.

This can lead to what we call error cascades, a succession of spin-off errors, potentially even worse than the first, that sees one relatively small error quickly snowball into something much larger and harder to manage.

In one particularly dramatic example, investigations have shown that a cascade of errors of this kind was what ultimately led to the disaster at the Chernobyl nuclear plant in 1986 in the then Soviet Union.

In contrast then, consider this approach from a manager of a firm with high error management:

"I try to create an open atmosphere and tell people they should inform me if they have made a mistake, so that we can do something about it. We try to be open and discuss errors because we believe that is the only way to control damage."

This position shows a culture that takes errors seriously, but that is open, accepting and non-judgmental about them once they have occurred.

It allows errors to be quickly identified, analysed and recovered from, as well as providing an environment in which they can be discussed and learnings extracted.

This approach also works to minimise the negative impacts and costs of errors – when an error happens, the firm knows how to deal with it.

Celebrating failure

Moreover, firms following this approach can lay the groundwork for coming up with more and more radical innovations.

These would be impossible without making errors because the innovation process implies entering a new and therefore unknown environment.

Having a practice of error management in tandem with error prevention helps firms and individuals deal with unexpected events, show more initiative and behave more proactively.

All of these are critical factors in improving productivity and profitability.

I have heard of one American consultancy, for example, that throws a party whenever a project fails, explicitly creating a social situation in which an informal but insightful dialogue about errors can naturally occur. That option might be a step too far for many companies. Nonetheless, firms that orientate themselves constructively towards errors tend to be the rare exception rather than the rule. For most firms, the potential for error management culture to provide them with a competitive edge has not been fully realised.

■ The writer is professor and head of the Department of Management & Organisation at NUS Business School. This article was first published on the school's Think Business portal (thinkbusiness.nus.edu)

Six reasons why innovations require errors

INNOVATIONS and errors are inextricably linked. The trail that leads to discoveries, new processes and inventions involves entering and exploring new fields of knowledge. They can be large or small, but almost always, making errors is an important part of the process of exploration and discovery.

Here are six reasons why having an effective error management culture can improve your organisation's capacity for innovation:

■ Innovation processes are inherently contradictory and chaotic

Innovative processes are inherently error prone. There is so much information that is unclear – therefore, errors are frequent. Creative ideas sometimes appear by chance. Errors help this serendipity during innovation.

■ Experimentation is crucial for innovation

Since there is no prior knowledge of what constitutes a useful innovation, experimentation is necessary. Many experiments, of course, do not work out, but experimentation should be done methodically, rather than at random. This way, necessary mistakes are made quickly, and their impact controlled.

■ Errors lead to exploration

Errors make people more aware of their actions and their environment, which can in turn spark exploration and lead to new areas of inquiry and innovations. For example, discoveries of the effects of Viagra and penicillin came about as a result of action errors.

It takes an open and prepared mind, however, to make the link, turning an accidental detection of a surprising phenomenon into an innovation.

A closed mind that views errors as only negative, will simply discard the results and move on.

■ Entering uncharted territory raises the likelihood of errors

New ideas, innovative products or services implies entering new and uncharted territory. Inherent to this is that there will be less knowledge and therefore more errors are likely.

Entrepreneurs, in particular, have to explore and improvise as they seek to build their business and connect with customers. Errors are the inevitable result.

■ Errors and creativity are related

Some creativity techniques such as brainstorming are precursors of error management.

Brainstorming (whether done in groups or alone) begins with a phase in which one should voice whatever comes to mind – even if it is wrong.

Only in the second phase of evaluation is the efficacy and usefulness of ideas put to the test.

Such creativity techniques implicitly differentiate between errors and error consequences, allowing and enabling errors as important for creativity.

■ Error management is closely tied to performance ambidexterity

A firm or organisation that is ambidextrous is one that is able to both experiment with new products while refining its existing products or services. This, however, requires an open organisational culture.

It acknowledges that failures can instigate new ideas and increase the organisation's strength to follow through on them, generating new products, services and methodologies.

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