How can oil and gas companies develop business resilience?

What’s your strategy for growing and managing your best customers?

How can you make collaborative innovation work better?
Today's business leaders draw inspiration from a variety of sources, both ancient and modern. One hugely influential work is *The Art of War*, written in the sixth century by Sun Tzu, a high-ranking Chinese military general, strategist and technician. His writings have much to teach any leader, offering insight not, as might be imagined from the title, into conflict and aggression, but into the value of well thought-out tactics and strategy. As Sun Tzu wrote, "Tactics without strategy is the noise before defeat."

At *Performance*, we have a strong belief that strategy is essential for every business. It influences and provides structure for every aspect of a company's operations, such as creating or sustaining its purpose, its competitive advantage and its growth. For this reason, in this issue, we explore strategy and its related elements of profitability and innovation.

For example, we explain how companies in the upstream oil and gas sector can get ahead of competitors by developing strategies that will work in today's low-price environment while encouraging "business resilience" in the face of future market uncertainty. We also offer insight into an integrated medical management strategy that will enable health care providers to realize investment benefits.

Once strategy has been set, performance improvement initiatives follow. "Profitability improvement: reaping the dividends" introduces a structured approach that can make the difference between an acceptable result and a great success, while "Customer lifetime profitability: how to grow and manage your best customers" offers a measure of the underlying profit for an organization's customer base, taking into account the future revenues and costs over the lifetime of the customer.

When it comes to innovation, many companies have developed open and collaborative innovation initiatives and partnerships to stay ahead of the competition, but often with mixed results. Our article explains how a well-defined strategy and better controls can help make collaboration more effective. And for those businesses that are already seeing innovation successes, "Insights into the business of counterfeiting: a differentiated model for the analysis and combat of pirates" offers some salutary advice on how to avoid your great ideas being copied.

Other articles explore how Africa can bridge its infrastructure gap more successfully and how wealth managers can use technology to drive business change.

We are proud to note that this is the 25th edition of *Performance* journal and we hope that you find it as valuable as ever in helping your business to innovate, grow and optimize.

Enjoy reading this issue!

Markus Heinen
Chief Patron, Performance
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How to cope with the oil shock

Businesses in the oil and gas industry are adjusting to oil prices that are at a six-year low. While the immediate future remains unclear, many expect the price of crude to, in time, reverse its recent decline. In this article, we explain how companies in the upstream oil and gas sector can get ahead of their competitors by developing strategies that will work in today’s low-price environment, but also encourage “business resilience” in the face of future market uncertainty.
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The oil and gas market has always been fairly volatile, sensitive as it is to geopolitics, global economics and technological change. But recent developments have seen a very large shift in market dynamics – heralding a new era for the industry and pushing oil prices to their lowest levels in six years. On the supply side, increased production in the US from shale gas and other extraction methods has flooded the market. Iraq, Brazil and other producers have also shown annual increases in production in recent years. Meanwhile, stuttering economies in the emerging markets has reduced global demand for oil and gas.

But this is not simply a story of rising supply and falling demand leading to lower prices. Even though the US has significantly increased supply in recent months, and even since the current price trough, the rig count in the US has decreased by 800. Furthermore, declining extraction levels in Mexico, Russia, Venezuela and the North Sea will also offset the supply increases seen elsewhere.

It seems likely that oil and gas supply will not continue increasing unchecked. And as a result, we expect to see the global oil price return to more normal levels in the future. But although the net level of supply may not be changing in the long term, it is certainly the case that the distribution of production is changing. With a growing oil industry outside the Middle East, and the introduction of enhanced and non-conventional extraction methods (such as hydraulic fracturing), the power of the Organization of the Petroleum Exporting Countries (OPEC) has started to wane.

On the one hand, this should mean that prices will return to parity as market forces are allowed a free (or freer) rein and the pressure of OPEC is withdrawn. But on the other hand, a weaker OPEC will add to price uncertainty in the future, because its member nations will have less incentive to act as price stabilizers – as they have done in the past.

In the medium and long term, we expect to see the oil price climb once again. But, with such uncertainty in a changing market, it is difficult to forecast when this hike will happen and predict what prices will be reached.

Implications for the upstream industry
For the upstream portion of the oil and gas sector at least, this low-price environment and long-term uncertainty are compounded...
by other industry pressures, which are driving up costs and narrowing profit margins.

There are both internal and external pressures in today’s climate for upstream operations. From within their own businesses, the majority of firms are having trouble with cash flow and earnings volatility. In turn, this is leading to capital shortages. And as departmental budgets come under pressure, capital expenditure funds are also limited, which makes it very tricky for firms to invest in growth. On top of this, inflexible projects with long lead times make it hard for businesses to plan expenditure accurately and to calculate their capital requirements.

External pressures are also mounting for upstream (and other energy) firms. Geopolitical uncertainty – always a significant unknown for the oil industry – is particularly keen at the moment, thanks to the unstable and unpredictable conflicts in the Middle East and tension between the European Union and Russia over Ukraine. Both of these conflicts – and others besides – could disrupt oil supply and change the market. From other quarters, there is uncertainty about the introduction of new efficiency and environmental standards in both the emerging and developed world. Finally, technological changes are having a very disruptive effect on the upstream market. The so-called “digital oilfield” is expected to redefine the industry over the next decade or so as horizontal drilling, fracking, steam assisted gravity drainage (SAGD) and water management become more commonplace.

All of these cost and margin pressures mean that it is very difficult for upstream businesses to spare cash to invest in future expansion.

Responding to the challenge: the business resilient enterprise

Businesses in the oil industry naturally respond to declining prices by reducing capital expenditure and spending on resources. This is the right way to respond, as these changes can have a fairly swift impact on the bottom line. However, upstream firms in particular are oriented toward the long term, because they are so asset intensive, involving long-term projects and extended supply chains. While downstream operations, such as refineries, can save costs by cutting back production during periods when margins are poor, upstream businesses cannot simply put a temporary hold on ongoing construction projects that are often highly capital intensive and require years to complete.

Figure 1. Rapid profit transformation (RPT) can build or further enable a business resilient enterprise
So, businesses operating in the upstream sector should capitalize on the opportunity to make changes in response to falling prices. But instead of simply thinking defensively of how they can mitigate the effects of these low oil prices, upstream firms should instead act now to prepare their business for the long term. A successful business is able to operate in any climate — when prices are low and when they’re high.

But designing a strategy to achieve this is not a simple task. In our experience, a strategy that will build broad business resilience for any organization, particularly in the upstream sector, needs to be designed to suit a firm’s overarching purpose and direction. The plan should also provide a business strategy, an operating model and architecture that will provide the necessary resilience in four broad areas:

► **Market resilience**
Businesses need to focus on restructuring and repositioning themselves in the market. This will involve identifying both risks and opportunities for revenue in order to capitalize and respond to market forces. It will also include building new business models that are able to deal with developments in the industry and potentially disruptive technologies.

► **Operational resilience**
Having greater visibility of and controls on expenditure is vital, and this means introducing continuous monitoring to deliver projects on time and to budget. Given that dialing down production at times when margins are under pressure is not an option for upstream operators, an extremely lean and cost-efficient integrated supply chain is also a must.

► **Financial resilience**
Upstream firms can re-optimize their financial position by restructuring their balance sheets, refinancing, optimizing their tax and corporate structures, and reducing their working capital.

► **Portfolio resilience**
Organizations can review and reshape their physical asset portfolio in order to reduce their risks while keeping their returns constant. An effective strategy can be to move portfolios to selective investments that offer quicker returns; for instance, strategic partnerships, emerging market investment or spending on innovation.

**RPT approach**

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**Figure 2. RPT is an integrated approach designed to improve financial results quickly while cultivating business resilience**

 nasıl içecek olduğunu belirtmek. Ancak, sadece düşkyapısal düşünme şansı olmaz; örnekler gibi düşük petrol fiyatlarında etkileri nasıl sınırlayabileceğine dair düşünmeliyiz. Upstream firmalar için, bu düşük fiyatlara karşı反应 yapmanın yerini alan bir strateji yerine, uzun dönemde sağlığını üretebilmeleri gerektiğine dair bir harekete geçilmesi gerektiği. Başarılı bir iş her zaman her iklimde operasyon yapabilir — fiyatlar düşükken ve yüksekken.

Ancak, bu hedefi elde etmek için bir strateji tasarlamak çok zordur. Düzlestone, her organizasyon için genel işlev ve yönden spesifik bir stratejiкуs ve operasyon modeli ve arayüzünü sağlayacak strateji tasarlanmalıdır. Bu plan aynı zamanda firmaların sürdürülebilirliğini dört büyük alanda sağlayacak: „**Market resilience**“


► **Operational resilience**

Verimlilik ve kontrolsüzleri daha da artırmak ve projelerin zaman ve bütçede teslim edilmesini sağlamak için sürekli takip yapmak gerekir. Verimlilik artırmak için üretim azaltma zamanlarında karlar altında basınç altında olmayacak için, bir çok planda ve zamanında üretim azaltma bir zorunludur.

► **Financial resilience**

Bir çok planda ve zamanında üretim azaltma bir zorunludur.

► **Portfolio resilience**

Organizasyonlar fiziksel varlıklarını ve vergi ve korporatuar strukturlarını genel risklerini azaltmak için yeniden düzenletebilir. Daha çevimsel ve verimli bir bütünleşmiş kiralık zincir üzerindeki bir zorunluktur.
In our experience, a strategy that will build broad business resilience for any organization, particularly in the upstream sector, needs to be designed to suit a firm’s overarching purpose and direction.

changes to their strategy and operating models. And as they do this, they should aim to emerge from the change process as more agile, nimble organizations that are more secure to work under any market conditions. They should also aim to generate financial cushions to safeguard their positions by improving profitability and cash flow.

EY’s experience and research has suggested that the following six factors are crucial to developing business resilience in the upstream sector:

1. Agile operating model
For any organization, business resilience is achieved on the basis of an agile and sustainable operating model that focuses on both cutting costs and achieving growth. In a low-cost environment, it is easiest and, in the short term, most effective, to improve efficiency by cutting costs. But, in the long term, these programs do not generate growth. Seventy percent of savings from cost cutting do not last for longer than three years. And for asset-intensive industries, such as the upstream oil sector, growth is particularly critical for economies of scale.

Historically, when facing market pressures, upstream companies have made decisions to cut capital, people and other costs that have improved the bottom line in the short term, but have ultimately had a detrimental impact — making it hard for business to scale up again when external pressures have subsided.

The current low-price environment is certainly not here to stay. As such, it is even more important for upstream firms to make savings today, but also build the agility needed to scale back up again in the future.

A successfully agile operating model focuses on recalibrating a firm’s organizational architecture so that costs are cut in the short term, while simultaneously protecting its most important value drivers, such as the unique talents and skills of its workforce. In our experience, an agile operating model also typically involves fostering lean and integrated supply chains and, for unprofitable businesses, entrance into joint ventures that create portfolios that align more closely with core competencies. In the contemporary market, firms should also ensure that they have a well-defined purpose and that technology and innovation are embedded in the organization.

2. Selective investments
It is essential that upstream oil firms looking to develop business resilience successfully evaluate and optimize their investment portfolios. In a volatile market, effective portfolio management relies on actively monitoring investments against a portfolio return objective. Companies should also work hard to evaluate their portfolio, selling off any investments that they do not manage well or identifying assets that would be better managed as part of a strategic partnership, for example. In a volatile market, some firms may also choose to switch investment to unconventional, higher-risk and -return options. For instance, unconventional extraction assets can yield oil two to three times quicker than more traditional deep-sea assets. In optimizing their portfolios, firms should also look at acquisitions of challenged and undervalued businesses.

Because they present such a high upfront risk to producers, deep-sea firms in particular need to focus on optimizing their investment portfolios. This helps to spread risk over a larger range of assets, including, for instance, brownfield and other proven reserves. But for all upstream firms, following a policy such as this reduces operational risk and helps maintain an optimal mix of assets spread over proven reserves and exploration and redevelopment activities. Finally, upstream firms should also consider diversifying their portfolios with investments in emerging markets, which may well offer high growth rates.

Of course, any new investment must be preceded by a thorough due diligence and risk analysis process.

3. Strategic partnerships
Upstream oil producers suffer a very high level of dependence on service providers. In fact, every US$1 spent internally is the equivalent of US$15 spent on external services. During a downturn, forming strategic partnerships can be a good strategy for tackling risk and improving output. For instance, an upstream business might form a strategic partnership with a drilling contractor, rather than just simply hiring the contractor. This partnership would allow the producer to save on the base cost, but at the expense of profit sharing with the contractor in the medium to long term. Similar partnerships can be formed between various operators working at various levels; for instance, in the form of a joint investment on a new oil asset.
As well as hedging risk and limiting immediate costs, this strategy allows firms to specialize in one particular area, such as refining or processing and so on. This leads to long-term efficiencies and higher margins.

4. Integrated supply chains

In today's oil and gas market, building business resilience in production supply chains requires an unprecedented level of agility and very flexible decision-making. The downturn in prices has inevitably led to producers passing the burden along the supply chain, requesting that their suppliers make voluntary price cuts in order to keep a contract. Clearly, this results in favorable savings in the short term, but can have a detrimental effect on relationships in the long term.

This pricing cycle is not good for producers or suppliers. Although it may well be necessary for a producer to request price drops in order to cut costs in a low-price market, we also recommend that this is twinned with an effort to build integrated supply chains involving cooperative, strategic partnerships with their suppliers.

In order to achieve this, and to help embed the potential savings within their organizations, upstream producers should introduce flexible terms and contract structures, information sharing with key partners, service-level tethering for tier-1 and tier-2 suppliers, and regional flexibility.

5. Commercial excellence

Another way to enhance market resilience is for upstream firms to integrate and align their commercial and operational activities more tightly. Upstream companies make money and create value in two ways: on assets (bringing the hydrocarbon out of the ground) and on paper (selling the hydrocarbon to customers). The integration of commercial and operational activities is what we call “commercial excellence,” and its focus is on top-line growth and extracting maximum margin for the hydrocarbon that is extracted.

Meeting the goal of commercial optimization means merging production, supply chain, governance, trading and risk management. It requires a sophisticated deconstruction of contracts to value all the revenue and risk components within these agreements. This involves the evaluation of different pricing and risk management strategies, capitalizing on price and demand relationships, valuing all the risk and options in a contract – including financial, volume and payment terms – and managing joint venture contracts. As the number of revenue sources for upstream companies is limited, this needs to be a rigorous process.

Optimizing the commercial side of things helps upstream businesses to extract maximum value from paper assets and to bring strong external market focus to the financial and risk management of the business.

6. Operational excellence

When it comes to achieving operational excellence, the key is to ensure that all processes are lean and efficient – without
creating any associated increase in risk—and that the management structure is optimized to serve this end. We have found that speeding up the decision-making process can lead to big dividends in terms of increased output and reliability. For example, one energy company was able to reduce costs by no less than US$1 a barrel.

A similar analysis for another energy company prompted the decision to free up field engineers from the need to perform “back-office” tasks such as billing and invoicing. This led to significant improvements in speed and efficiency, which, in turn, resulted in reduced costs.

Ensuring business resilience can also mean taking into consideration ways to reduce or mitigate risk. In the area of operational excellence, linking standards to health, safety and environmental (HS&E) issues is critical. Due to lean headcounts, those in operations who deal with efficiency and service quality are often either double-tasked with safety, or are safety people who are loaded with additional parts to their duties. This can be detrimental to the execution of both roles, but is superficially attractive because it serves to reduce the number of “inspectors” roving the operations. Since these roles are not revenue generators, shortsighted leaders often see them as candidates to be cut or consolidated. The key to competitiveness and resiliency is making these functions revenue enablers as opposed to “stop-work” machines.

Operational efficiency is a key component of success for any company in any area and, because of this, each firm needs to define carefully what it means by the term. Our experience suggests that businesses should ensure that each one of their teams focuses on discipline of execution in all that they do.

During a downturn, forming strategic partnerships can be a good strategy for tackling risk and improving output.
Customer lifetime profitability: how to grow and manage your best customers

Investing in customer relationships is the key to long-term, sustained profitability. A customer strategy focused on optimizing the customer life cycle and customer lifetime profitability (CLP) can deliver this.
The development of long-term profitable relationships should be a major focus for all businesses. Markets are increasingly becoming competitive, with consumers actively seeking brands and providers they can rely on and keep purchasing from over many years.

How those relationships are managed and nurtured is the foundation for CLP, which offers a measure of the underlying profit for an organization’s customer base, and considers the future revenues and costs for the lifetime of the customer.

Many organizations do not have an accurate understanding of which customers are profitable and which are unprofitable. Companies that do are able to deploy strategies to acquire and retain more profitable customers, and increase the profitability of customers that are low or loss-making. These organizations achieve profit growth more efficiently, retain more customers and spend more effectively.

By taking a customer-centric view to managing the revenue and cost base, organizations can make decisions founded on customer need and deliver “good profits” derived from improving customer experience and advocacy. This means investing in what matters most to customers and, at the same time, removing or improving processes that frustrate customers and increase an organization’s costs. Enterprises that adopt this approach will be rewarded with better customer outcomes as well as improved profitability.

What does customer value really mean?
The concept of a customer lifetime value has been discussed for some time. What EY has found is that many of the businesses we work with don’t yet have a detailed understanding of the cost-to-serve component of their businesses. The core idea behind CLP is that companies can improve their profitability and lower their costs by being more customer focused.

Those of our clients that have a close eye on the future work with us to extend CLP and focus on acquiring and – more importantly – retaining high-value customers. In the CLP model, gaining large numbers of customers isn’t the focus, but gaining high-value, long-term customer relationships is. What businesses then see is a strong positive financial outcome from CLP, and also a strong customer services outcome, which feeds back into CLP.

The foundation of CLP is data. Until fairly recently, a clear and comprehensive insight into customer behavior was quite difficult to develop. Today, thanks to research, big data and social media, detailed customer profiling has become possible. CLP, by extension, is a product of this new insight and the way massive datasets can be interrogated to reveal customer behavior and, to a large degree, predict future customer behavior.

Yet the surge in big data brings its own challenges. In particular, the information crisis that is now facing a significant proportion of organizations. There are opportunities for the taking but only for those businesses that can successfully and consistently identify what information is the most relevant and generates the most value. For those that are unable to make big data work for them, the future will bring a lack of control.

The vast quantity of data now pouring into the businesses we work with has delivered an unprecedented level of granular insight into customer behavior. This insight is also in real time, which means companies need to be more agile if they are to leverage effectively the information they have.

More organizations are now focusing on one-to-one customer marketing rather than a model based around mass-market broadcasts. These are delivered through analytics, incorporating insights that focus on personalized solutions and the “next-best action” for the customer using trigger-based scenarios. Pre-empting customer needs improves their experience and is a powerful tool for engagement.

What we are finding is that many of our clients are beginning to realize that...
Using CLP to improve performance

CLP is a measure of the underlying profit of an organization's customer base, taking into account the future revenues and costs for the lifetime of each customer. By implementing a CLP model, an organization can focus its spend and effort toward growing and managing the most profitable customer segments and customers.

The benefits of adopting a CLP approach include:

- Maximizing profit return on the customer base
- Improving market performance
- Improving productivity and profit performance
- Increasing customer satisfaction
- Optimizing sales and marketing
- Improving infrastructure decisions

Figure 1. Managing CLP to improve performance

![Diagram illustrating the CLP process and its benefits](image-url)

- **1. Determine the profitability of each segment**
- **2. Analyze the customer base on profitability**
- **3. Develop strategies for maximizing profitability of the customer base**
- **4. Segment the customer base**
- **5. Implementation**
- **6. Measure, review and continuously improve**

**CLP distribution**

- **Bottom 30% of customers deliver negative profit**
- **Top 23% of customers drive 90% of the profit**

**US$**

- **23% of customers drive 90% of the profit**
- **30% of customers deliver negative profit**

**Improve the profit profile**
Many organizations still don’t appreciate how significant social networks have become to their customers and their businesses.

Figure 2. Customer profitability maturity model


Many organizations still don’t appreciate how significant social networks have become to their customers and their businesses.

Figure 2. Customer profitability maturity model
investing in CLP offers them a chance not only to understand their customers better, but also predict what they will need in the future. That future-facing capability is a powerful paradigm that CLP is delivering to many of the businesses with which we work.

What is clear, however, is that companies need to evolve their existing systems to make the most of what CLP has to offer. Typically, this means improvements in their customer relationship management (CRM) systems, the ability to collect and analyze customer data, and, importantly, a strong focus on the goals that a CLP approach will help them achieve. The disciplines of knowing who your customers are at a very detailed level, and understanding which of those customer segments your proposition is aimed at, must be approached collaboratively across the organization.

It’s also important to recognize that the ultimate goal of CLP may not, in some scenarios, mean selling a product or service, but providing a positive customer experience. As more customers move to social media for customer service queries, these interactions must be comprehensively supported, as this aspect of customer service has a fundamental impact on the success of CLP.

The more successful businesses we work with have a shared focus on their customers. By this, we mean that they discourage siloed interactions; instead, they take a comprehensive and holistic view. There is a strong drive to ensure that their customer strategy is comprehensive and business-wide. In addition, the support they deliver to customers is deployed over multiple channels, driven by a unified customer strategy and approach.

For many organizations we work with, gaining a comprehensive view of their customers is challenging. For CLP to deliver on its promise, most businesses will have to make an investment to gain the tools they need. However, the changes that are often needed are organizational. One of the key components here is to have the ability to accurately attribute cost at a customer level. Ideally, that requires activity-based costing.

How businesses approach the tools they use to interrogate the customer data they have will vary. Many begin with specific reports and expand their actions based on that. A dashboard approach to viewing and interrogating data is also useful. But the key aspect to focus on here is regular reporting, as this will influence the planning and execution of business strategy that has CLP as an important component.

**CLP is an evolving journey**

The multichannel approach that many businesses are now taking is, in part,
Mindful of this trend, Whole Foods recently launched a customer loyalty mobile app and a groceries delivery service. They are part of the US supermarket chain’s strategy to keep its loyal customers connected across multiple selling channels.

“Customers now expect to connect with the brand whenever, wherever and however they choose,” says Whole Foods Co-CEO Walter Robb. “And it’s part of our broader digital road map; we are rapidly building out an extended customer experience beyond the four walls of our stores.”

Such a coordinated approach is essential so that a business “continually exceeds customer expectations with all interactions, winning loyal advocates with its customer-centric culture,” emphasizes Mike Richardson, Managing Director EMEA at customer relationship management software provider Maximizer CRM. The omnichannel environment, he adds, presents businesses with an unprecedented opportunity to grow revenues.

“In the digitally driven marketplace of today, brand evangelists can spread the word to hundreds, if not thousands – and in certain magical instances, millions – of

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prospects,” says Richardson. “Up-selling and cross-selling opportunities are also far more likely when customers are happy.”

The message is clear: for businesses to obtain the greatest commercial advantage from CLP, they have to transform not only their management systems, but also their attitude toward their customers. Are businesses still in the transformational stage of their development? Or are some already reaping the rewards that CLP offers?

We find that the businesses that are taking customer strategy and customer targeting seriously are the ones that are rapidly developing and implementing CLP. Because CLP requires a business to transform many of these functions, it can take several months or years to move that business to the point where it can see tangible benefits from a CLP implementation. What is important is that CLP isn’t adopted by just one department – customer service, for instance – as this will not deliver the required levels of cost reduction and profit increases. An organization must have a holistic approach to how it changes in order to adopt CLP.

The area that tends to take the most time to implement is organizational change management. Improving the service experience that customers have means changing how these relationships are managed. The business philosophy and brand values of the company have to be clearly communicated – something that is often overlooked. CLP demands that the customer-facing aspects of a business must be clearly defined and focused on high levels of customer service, as this is the foundation for long, lucrative customer relationships.

It is vital to ensure that CLP is developed with all customer touch points and business strategies implemented together. CLP will fail if there is a disconnect between its stated goals within a business and the way this is actually delivered to the customer. Again, a holistic approach is critical to the success of CLP and the business strategy that underpins it.

When businesses understand their customers at an attitudinal, functional and geographic level, they can start to develop new products and services that will speak directly to these customer groups. This is the essence of CLP and the tangible delivery of improved levels of profit with reduced costs. And, of course, businesses can begin to get ahead of the market with new products and services, which then deliver a massive commercial advantage in their sectors.

CLP is a measure of how effective a business is at delivering customer needs. All businesses want to be customer-centric. CLP enables a business to measure how it is delivering its services, what this means for cost and, of course, the level of profit it is gaining from individual customers. ■
Insights into the business of counterfeiting: a differentiated model for the analysis and combat of pirates

Counterfeiting has become a multibillion dollar industry, but insights into the supply side of counterfeiting are very limited. This article explores the supply side of counterfeiting and identifies different business models of counterfeiters. Our insights are based on a qualitative empirical study comprising 290 expert interviews from 190 different firms and institutions.
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Counterfeiting is not a new phenomenon. However, its volume has increased dramatically over the past decade. Counterfeiting has become a multibillion dollar industry, but insights into the supply side of counterfeiting are limited, as are the insights into the real damages caused by counterfeiters. It is estimated that counterfeited products account for 5% to 7% of the world’s trade. The Organisation for Economic Co-operation and Development (OECD) quantifies the damage of product and brand piracy at around US$500 billion.2 It’s not only consumer brands and luxury goods that are affected by counterfeiting; investment goods are also impacted. Estimates suggest that mechanical engineering firms lose about 4% of their revenues to illegally operating competitors.3 Given the damages caused by counterfeiters, it is surprising that there is limited management research focused on them.4 Most of the studies that address the firm level of counterfeiting come to rather superficial conclusions. Obviously, there are “different types” of counterfeiters, who act “throughout the supply chain” and use “various strategies and instruments” in a “highly professional” manner. Beside such rudimentary insights, the strategies and tactics of counterfeiters remain largely unexamined and unknown. Until today, there have been only a very few studies that have dealt with the business models of counterfeiters.5 To address this shortcoming, our study explored the supply side of counterfeiting. Based on an extensive empirical study, we developed a differentiated view of counterfeiters’ business models and illegally operating copycats.

**Empirical study: sample and methodology**

The core problem with investigating counterfeiters is the very restricted access to information. Conventional surveys aimed at obtaining information on counterfeiters’ clandestine illicit market activities come to nothing: counterfeiters don’t publicize their contact information and, in any case, the response rate is unlikely to be sufficient, with any actual responses prone to bias (e.g., counterfeiters avoiding giving true and full information in order to cover illegal activities). This is the prime reason why the supply side of counterfeiting is poorly understood: it is hard to capture information on a quantitative basis! As such, we decided that, for our study, a qualitative research approach would be more effective. To collect the data, we combined several sources of information to ensure an adequate triangulation. We employed the following quality criteria for sample selection:

- **Trustworthiness**: in this illegal and sensitive field, access to “honest” information, plus issues connected to confidentiality, are the prime challenges.
- **Historical incidents**: counterfeiters cannot (or only to a limited extent) be observed directly. Thus, the provision of insights into historical incidents (e.g., court cases) is needed.
- **Indirect insights**: due to the limited potential of direct observation, we relied on indirect information and evaluations of counterfeiting experts, including police and customs officers.

Following these criteria, we employed three instruments for data collection:

1. Interviews and transcripts represented our primary form of data collection. We selected in-depth semi-structured interviews with industry, academic and governmental experts.
2. Case studies on critical incidents were used to clarify confusing or interesting information that arose from the expert interviews.
3. Internal documents from firms and official authorities comprise presentations, reports and manuals on anti-counterfeiting processes and...
counterfeiting cases. The documents were used for clarification and validation of the interviews and case studies.

The empirical study centered on the phenomenon of counterfeiting beyond consumer and luxury goods. The sample covered, primarily, experts on piracy in durable consumer and investment goods. Between 2007 and 2014, 290 interviews were conducted, covering 257 experts from 190 companies and institutions. Table 1 shows the affiliation of experts by types of firms and institutions.

As can be seen, the emphasis of our expert interviews was on manufacturing companies (107 firms), the biggest share of which was in mechanical engineering (33 firms), followed by medical products and pharmaceuticals (15 firms), automotive supplies and accessories (12 firms), and furniture (7 firms).

All experts had to meet one important criterion: they must be affected by counterfeiting as part of their work, irrespective of their position within the organization. We drew on the knowledge of 257 experts, covering a wide range of positions and hierarchical levels with counterfeiting experience ranging from 3 months to 15 years. Counterfeiting is relevant to everyone: from temporary project managers up to the CEO. Table 2 shows the range of experts by function (for some, we were not permitted to disclose their functional background).

We employed a qualitative content analysis method to structure the interview data and filter out insights about

Most counterfeiters have cost advantages over their legal competitors due to lower preproduction costs, lower safety standards, tax savings and lower labor costs.

### Table 1. Institutional affiliation of experts (percentage of total)

| Experts from manufacturing firms (ISIC C)* | 57.1 |
| Experts from (German) business and industry associations | 14.7 |
| Experts from firms in services industries (ISIC G and S)* | 9.7 |
| Experts from IT firms (ISIC J)* | 8.2 |
| Experts from firms in construction industries (ISIC F)* | 3.8 |
| Experts from public authorities and governmental bodies | 2.1 |
| Researchers and consultants on piracy issues | 2.1 |
| **Total** | **100.0***

* The International Standard Industrial Classification (ISIC).
Counterfeiting management. We used a category system for data coding that connects key words (codes) to words, sentences or paragraphs. In order to handle the huge amount of data, we used a specific software tool for qualitative data analysis.

The management and business models of counterfeiters

What are the drivers? The economies of counterfeiting

The motivation behind counterfeiting covers various agendas: setting aside the goal of making profits, experts reported that counterfeiters don’t always have a criminal intention. For example, many firms use counterfeiting to close a technological gap with the longer-term aim of becoming legally operating competitors in their own right. Counterfeiting is also exploited by governments as a well directed instrument to harm (foreign) legally operating firms and to strengthen and protect local industries.

What makes counterfeiting such an attractive business? The answer is obvious: piracy is highly profitable and the risks are mediocre. Counterfeiters have several advantages that we’ve called “economies of counterfeiting.” These include “free-rider” effects and economies of scale and scope. Counterfeiters can free ride on the creative and innovative efforts of legitimate companies’ technology and market development efforts. In addition, most counterfeiters have cost advantages over their legal competitors due to lower preproduction costs, lower safety standards, tax savings and lower labor costs (if production is offshored).

However, counterfeiting also exhibits risk and specific costs that we’ve labeled diseconomies of the piracy business. Counterfeiters face a risk premium (discount) for illegality and have to make reserves for product confiscations or lawsuits. Additional costs arise due to masking and securing the illegal supply chain.

Understanding counterfeiters’ business models

We identified four basic counterfeiting business models that centered on different core activities of value creation, i.e., manufacturing, distribution, coordination and financing.

1. Counterfeit manufacturers focus on the manufacturing and assembly of counterfeited goods. Some are fully integrated along the whole production chain, while others specialize in selected stages and act as a counterfeit suppliers. The fact that the business model’s focus is on manufacturing acts as a trigger for technological learning, with the result that (illegal) imitation speeds up competence building in production. The business model often benefits from mistakes in the intellectual property (IP) protection of the manufacturers’ original goods.

   This is particularly true in the case of developing countries, where many firms allow gaps to arise in their IP protection. In addition, in many developing countries, the protection of IP rights is hampered by weak enforcement regimes.

Table 2. Participating experts by function (percentage of total)

<table>
<thead>
<tr>
<th>Function</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>40</td>
<td>15.7%</td>
</tr>
<tr>
<td>Law</td>
<td>36</td>
<td>14.0%</td>
</tr>
<tr>
<td>Anti-counterfeiting</td>
<td>27</td>
<td>11.1%</td>
</tr>
<tr>
<td>Intellectual property</td>
<td>22</td>
<td>8.6%</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>20</td>
<td>7.8%</td>
</tr>
<tr>
<td>Academic research</td>
<td>13</td>
<td>5.1%</td>
</tr>
<tr>
<td>Marketing</td>
<td>9</td>
<td>3.5%</td>
</tr>
<tr>
<td>PR and communication</td>
<td>9</td>
<td>3.5%</td>
</tr>
<tr>
<td>Security</td>
<td>7</td>
<td>2.7%</td>
</tr>
<tr>
<td>Business development</td>
<td>6</td>
<td>2.3%</td>
</tr>
<tr>
<td>Sales</td>
<td>11</td>
<td>4.3%</td>
</tr>
<tr>
<td>Product management</td>
<td>4</td>
<td>1.6%</td>
</tr>
<tr>
<td>Quality management</td>
<td>4</td>
<td>1.6%</td>
</tr>
<tr>
<td>Management accounting</td>
<td>3</td>
<td>1.2%</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>3.5%</td>
</tr>
<tr>
<td>Permission not granted</td>
<td>37</td>
<td>14.4%</td>
</tr>
<tr>
<td>Total</td>
<td>257</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Most firms are reactive when it comes to anti-counterfeiting activities, only beginning to consider how to respond after the first instance of piracy has occurred and long after the design of the product.

Critical success factors for this business model center on efforts to ensure quality in production, investments in machinery and production facilities, and networking with distribution partners. Typically, counterfeit manufacturers are located in remote locations to avoid detection by the original equipment manufacturers (OEMs). All experts agree that China is the biggest host for this type of counterfeiting business model. However, pirates from other developing economies, such as Asia, Eastern Europe and South America, gain market shares.

2. **Counterfeit distributors** specialize in distribution and logistics services. Providing these kinds of services within the counterfeiting business requires a knowledge of accessible markets and distribution capabilities. Market knowledge includes information about original products, target markets of the OEMs, distribution channels and consumer behavior. Distribution capabilities focus on the creation and management of various direct and indirect distribution channels for the flow of materials, supplies and goods among counterfeiters, between counterfeiters and consumers, and between counterfeiters and OEMs.

   A critical success factor for distributors is the infiltration of legal distribution and supply channels. Networking and “greasing hands,” e.g., paying bribes, are prime activities, especially in the capital goods industry, where counterfeit distributors have to establish personal contacts to acquire partners not only on the demand, but also on the supply, side. Supply, is critically dependent on the relationship with the counterfeit manufacturers. Without a broad network of manufacturing options, a distributor is likely to be unable to satisfy demand.

   In contrast to counterfeit manufacturers, the distributor business exhibits low levels of fixed costs, flexibility and only moderate risks of being sued, at least as long as distributors avoid the markets of OEMs. In developed economies, counterfeit distributors are the prime target for prosecution.

3. **Counterfeit coordinators** are the brokers in the piracy business. Professionally managed counterfeit production systems demonstrate a high degree of decentralization and division of labor between the actors involved. Brokers direct the value creation process and coordinate counterfeit manufacturers and distributors. The brokers’ critical assets are their network and masking capabilities. Masking provides immunity against prosecution and includes “friendly” interaction with enforcement and governmental bodies.

   Some experts also highlighted the ownership of key OEM equipment as critical assets, such as blueprints, special molds or tools that are then provided, on demand, to counterfeit manufacturers and suppliers. To maintain the flow in the overall counterfeit production system, coordinators have to ensure redundant structures are built into the system as, in cases of detection, redundancies avoid supply shortages.

4. **Counterfeit financiers** are the “gray eminences” in the business. The financiers handle the monetary flows that “oil” or ease the way for counterfeiting. Financiers carry out three major functions:

   - They act as venture capitalists in the business, raising the funds required upfront to finance the business.
   - They act as the bank, handling the money flows between the parties involved.
   - They take responsibility for laundering the money, i.e., transferring the illegal revenues and profits into what appear to be legitimate funds.

   The experts agreed that this business model generates the highest profits in combination with the lowest level of risk.

   These business models portray “ideal” types. Many counterfeiters are “diversified” and combine some or all four entrepreneurial orientations. We were able to identify all sorts of combinations, from fully integrated pirates to highly specialized counterfeiters.

**Additional strategic parameters**

In combination with the aforementioned four generic business models, our experts identified four additional strategic parameters to distinguish different piracy businesses:
In all cases, effective anti-counterfeiting requires a differentiated approach.

1. Deceptive versus non-deceptive counterfeiting refers to the basic decision for open or masked operations and transactions. Non-deceptive counterfeiters follow an open operations strategy. They use their competitive advantages to interact with counterfeiting-friendly partners, retailers, and customers who appreciate counterfeits due to lower prices. In contrast, deceptive counterfeiters try to mask their illegality. A deceptive strategy aims at hiding the illegal origin of the products. Thus, masking is a core activity. This strategy is used if a market consists of uninformed consumers who cannot distinguish between counterfeits and original products or an assessment is not possible prior to purchase.

2. The scope of IP-infringement may vary and pertain to violations of technical IP rights (i.e., patents and design patents), trademarks or copyrights. Experts report all type of infringements and various combinations. For example, many counterfeit manufacturers specialize in patent piracy without trademark infringements, whereas some counterfeit distributors adhere to brand piracy and simply add original trademarks to functionally distinct products.

3. The geographical range of operations and markets may vary. Some counterfeiters limit their activities to their home market, some have extended their scope to selected international markets, some have a regional focus (e.g., Asia) and a few operate globally. The degree of internationalization positively correlates with the degree of business risk. Thus, many counterfeiters limit their activities to domestic markets, to avoid anti-counterfeiting activities and thereby achieve learning-curve benefits without the potential for conflict.

4. Counterfeiting can be a full-time or part-time business. When it is full time, the illegitimate activities are carried out with purpose-focused strategies and tactics. Full time counterfeiters pursue their business actively. In contrast, part-time counterfeiters use piracy only to complement their legitimate product portfolio, e.g., to make full use of capacities. In the prime business, part-time counterfeiters are OEMs!

Implications for anti-counterfeiting in practice
Our empirical study has revealed different business models and strategies within the counterfeiting industry. OEMs’ anti-counterfeiting activities should take these differences into account. As core recommendations, rights holders should ensure they consider the two steps detailed in the remainder of this article.

Develop a strategic approach to anti-counterfeiting
There is consensus among the experts that firms need an adequate anti-counterfeiting strategy. Based on this strategy, OEMs can then select the appropriate instruments for fighting counterfeiters, depending on their business models.

Figure 1 visualizes our framework of anti-counterfeiting strategies. The appropriate strategy is determined by the strength of the IP-enforcement regime and the strategic threat from the piracy business. The strategic threat not only depends on the extent of the (potential) damage caused by pirates, but also on the professional attempts of counterfeiters to evolve to legal competitors in their own right. The IP-enforcement regime is defined in all cases, effective anti-counterfeiting requires a differentiated approach.
Successful firms start thinking about anti-counterfeiting measures at an early stage and consider the topic of high-strategic relevance within the product development process.

Integrate anti-counterfeiting into product and service (pre-) development processes

The experts agreed that most firms are reactive when it comes to anti-counterfeiting activities, only beginning to consider how to respond after the first instance of piracy has occurred and long after the design of the product.

As a consequence, the toolbox for the selection and application of anti-counterfeiting instruments is limited. Technical changes to the product or patent filings are no longer possible or will result in significant costs. Successful firms start thinking about anti-counterfeiting measures at an early stage and consider the topic of high-strategic relevance within the product development process. We recommend, therefore, that all companies should integrate the analysis of potential threats due to counterfeiting and the selection of appropriate protection instruments into the (pre-) development process.

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Long-lasting pressure on sales growth and margins has resulted in companies embracing innovation. Realizing that traditional approaches fall short, many firms have developed open and collaborative innovation initiatives and partnerships to stay ahead of the competition, but often with mixed results. Effective use of collaborative innovation is challenging, but can be improved with a well-defined strategy and better controls.
Authors

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Ir. Jan J. Visser
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One of the many effects of the recent economic downturn is the pressure that it has created on sales growth and margins. As a result, many industries and businesses have been dominated by cost-cutting programs (operational excellence, lean supply chain, etc.). Although cost reduction can be an effective way to improve or sustain results, a more desirable and structured way out of revenue and margin pressure is innovation. However, many companies have experienced disappointing results from their innovation efforts to date and want to adopt modern approaches that have been explored by leading innovators over the past decade. What they especially want to realize is how to make innovation work in terms of significant, new breakthrough products and actual margin increase.

Be sure that you understand what it is that your company wants to achieve before you define how innovation can contribute.

Of consumer products and retail company executives, 66% say collaboration is increasingly important to achieve strategic goals.

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Figure 1. Levels of difficulty experienced by consumer products executives in conducting product and process innovation

<table>
<thead>
<tr>
<th>Global</th>
<th>Product innovation</th>
<th>Process innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significant increase</td>
<td>Significant increase</td>
</tr>
<tr>
<td>12%</td>
<td>27%</td>
<td>43.4%</td>
</tr>
<tr>
<td>28.1%</td>
<td>39%</td>
<td>16.1%</td>
</tr>
</tbody>
</table>

Source: Delivering agile innovation: creating value from collaboration with entrepreneurs in consumer products and retail, EY, 2014.
EY research1 confirms the growing need to find new ways to innovate. The research, which surveyed consumer products executives from across a large number of leading, multinational companies, produced some interesting findings:

► Most companies experience increased difficulties in conducting product and process innovation.
► Companies see collaborative or agile innovation as an improved innovation method.
► The challenge is in actually realizing successful (collaborative) innovation.

These findings are also very much in line with what we see in the market and with our clients. Many companies are, indeed, active in collaborative innovation efforts, including:

► Internal innovation hubs or centers that stimulate internal cooperation and bundle the knowledge needed to innovate
► Platforms that invite (external) entrepreneurs to post their innovation ideas
► Collaboration with start-ups
► Regular (crowd-sourcing) sessions bringing together internal staff, external entrepreneurs and sector specialists to generate new ideas

Companies creating “spin-offs,” often based on related technology and products
Companies venturing or acquiring innovative or entrepreneurial firms in order to incorporate innovation capacity and culture

It is also clear that collaborative or open innovation doesn’t always produce an abundance of results. CEOs and CFOs complain that, although they see a boost in innovation activities, they are still waiting for convincing results in terms of sales growth and increased margins. We observed several common reasons for this lack of tangible results. First, open innovation is effective only when there is a clear sense of purpose and direction that fits with what the company really wants; many companies are too vague when it comes to this.

Secondly, open innovation is only effective when the innovation efforts are managed in the right way; for instance, ensuring the right ideas are selected early on in the process. Many firms still lack the control and appropriate management processes to do this.

This article, therefore, explores two important areas for improvement that can help better exploit the benefits of collaborative innovation:

1. Innovate within the context of a clear business and innovation strategy
2. Organize collaborative innovation in a way that allows for effective management of the innovation process

Collaborative innovation within the right strategic context

Many companies innovate in an uncoordinated way and within a context that is too broad or not well-defined. What companies need is a focused innovation effort, resulting in innovation activities that more easily enhance both each other and the actual innovations that are adopted by the business. This is where strategy comes into the equation. What we would argue is that collaboration is only a successful method of innovation if it is done within the right strategic context. Two ground principles apply here:

► Innovation should always be embedded within the company’s (business) strategy
► A business strategy must be translated into an innovation strategy that defines the ambition, goals, methods and selection criteria for (collaborative) innovation

What we mean is that (collaborative) innovation should contribute to realizing the overall business strategy. Business strategies are developed within the context of specific macroeconomic trends, market and industry developments, and the competitive arena in which the company operates. A business strategy typically defines, among other things, the company’s market and customers, how it can differentiate itself from its competitors, the business model needed to deliver the strategy and the concrete objectives that will promote growth, market share and financial performance.

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It is this business strategy that will provide the context in which the innovation strategy must be defined. Most companies have done part of the work and identified their business strategy. However, the problem, in many cases, is that they fail to specify in detail how innovation should contribute to that business strategy.

Furthermore, while many innovation officers are in agreement that innovation should be guided by a clear, dedicated strategy (and that it should be linked to the business strategy), they find it very difficult to articulate. They realize that it is about more than just having a KPI such as “we aim to have 20% revenues from products less than three years old.” But the question they ask is, “what should be in an innovation strategy?” To help answer this, we have detailed here what we believe to be the key aspects of an innovation strategy, and Figure 2 gives additional insight into the principle elements:

- **Ambition**: ranks the relative importance of innovation activities within the overall business strategy and defines the desired types of innovation (e.g., the percentage of radical activities versus incremental).

- **Contribution**: quantifies exactly what the innovation activities are expected to bring to the business in order to, for example, improve current state, bring in new business or build and develop the company’s overall competitive position.

- **Scope**: defines which parts of the business model the innovation activities will affect. It also describes what the desired balance is between product and process innovation. It sets the target innovation project portfolio, budget and timing.

- **Focus areas**: identifies the markets, customers and technologies on which innovation should focus. These should be very much in line with the business strategy’s goals.

- **Partnering**: assesses the importance of partnering (e.g., the percentage of innovation projects that will be with partners) and defines the desired types of partnerships (i.e., joint, open or outsourced) and partner profiles.

- **Approach**: provides clear guidance on what instruments can be used in innovation (i.e., collaboration tools), which employees must be involved, and which external partners are relevant and useful. In addition, the approach has to say something about the use of venturing and how to deal with intellectual property (IP).

- **Assessment criteria**: defines the assessment and selection criteria relevant to each stage and type of innovation. It also addresses the basis on which the innovations are to be rated and selected.

If all, or at least the majority, of these elements are defined, innovation will be much more geared and aligned to the business’s actual goals. Once the specific ambitions, scope and focus of the company’s innovation activities are identified, informed conclusions can be drawn about whether collaborative innovation is the preferred approach, the other elements of the innovation strategy will prevent such collaborative efforts from being too open. This, in turn, will improve the focus of the innovation process and the return it provides.

Collaborative platforms are more than just tools to stimulate ideation, they really can contribute to the management of the overall innovation process.
### Figure 2. Innovation strategy: the key elements

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Potential elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ambition</strong></td>
<td>Relative importance in the overall strategy (e.g., supports current position, facilitates new strategy or transforms business)</td>
</tr>
<tr>
<td></td>
<td>Level of innovativeness compared with competitors</td>
</tr>
<tr>
<td></td>
<td>Desired types of innovation (i.e., percentage of radical innovations versus incremental)</td>
</tr>
<tr>
<td><strong>Contribution</strong></td>
<td>Intended contribution to improvement of current business (e.g., sales growth and margin improvement)</td>
</tr>
<tr>
<td></td>
<td>Intended contribution to development of new business (e.g., developing new markets, new segments and new product areas)</td>
</tr>
<tr>
<td></td>
<td>Intended contribution to competitive position (e.g., differentiation, brand image and marketing exposure)</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Business model aspects that are in scope (e.g., target customers, distribution channels, products and services, sourcing and partners)</td>
</tr>
<tr>
<td></td>
<td>Intended distribution versus process oriented innovations</td>
</tr>
<tr>
<td></td>
<td>Target innovation project portfolio</td>
</tr>
<tr>
<td></td>
<td>Budget and timing</td>
</tr>
<tr>
<td><strong>Focus areas</strong></td>
<td>Geographic markets, market segments and target customers</td>
</tr>
<tr>
<td></td>
<td>Customer needs, product families and services</td>
</tr>
<tr>
<td></td>
<td>Technologies</td>
</tr>
<tr>
<td><strong>Partnering</strong></td>
<td>Relative importance (e.g., percentage of innovations with partners)</td>
</tr>
<tr>
<td></td>
<td>Types of partnerships per focus area (e.g., outsourced exploration and development, joint innovation and open innovation)</td>
</tr>
<tr>
<td></td>
<td>Partner profiles, criteria and selected partners</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Instruments to involve employees, customers, suppliers, etc.</td>
</tr>
<tr>
<td></td>
<td>Use of venturing</td>
</tr>
<tr>
<td></td>
<td>IP policy</td>
</tr>
<tr>
<td><strong>Assessment criteria</strong></td>
<td>Assessment and selection criteria per stage and per type of innovation</td>
</tr>
</tbody>
</table>
How to organize to optimize the management of collaborative innovation

Collaborative innovation differs significantly from regular innovation. It is much more unpredictable, dynamic and complex (i.e., involving various participants), and often uses new technologies and partnerships. However, these characteristics also bring with them fresh approaches for the way that the innovation process is managed.

We see two important elements that can help improve control over the innovation process and should always be considered when collaborating with others:

1. Choose the right collaboration tooling and use it appropriately
2. Establish a well structured approach for working with collaboration partners and differentiate this based on the innovation domain or the type of innovation partner

As described earlier, companies do already use all sorts of methods and tools to stimulate collaborative or open innovation. It is fair to say that collaborative software platforms are gaining in popularity and are often used to stimulate the ideation process. These collaborative platforms are generally software-based tools that create an environment in which multiple participants can work together, independent of location or organization. They facilitate efficient processing of ideas, knowledge and other contributions, and enable participation of the most appropriate resources. Collaborative platforms are, therefore, ideal for generating innovation ideas from a broad selection of participants with different backgrounds and expertise.

We believe that, on top of facilitating ideation, collaborative platforms can also be used to manage the innovation process as a whole; for instance, in providing feedback or organizing iterative improvements on a selection of innovation options. A collaborative tool, therefore, transforms into a true innovation management platform.

There are many innovation management platforms on the market. Some of them are specifically designed for that purpose, others make good use of existing technology developed for other and more general (knowledge) management processes. Accordingly, a distinction (simplified) can be made between large, generalist platforms that have a broad footprint and more of a “fit for all” technology (e.g., SharePoint and Yammer).

Another category is the often much smaller but more tailored innovation platforms. These are focused on providing solutions specifically for innovation processes and tend to be more effective for this purpose.
We have observed the following critical benefits when a good innovation platform is used:

► Increased involvement and contributions (idea generation and development)
► Improved quality (because experts build on each other’s ideas and a broader set of experts is involved)
► Accelerated progress and efficiency across innovation projects
► Coordinated innovation efforts, generating valuable management information
► Stimulates an “innovation culture”
► Better transparency of knowledge flow
► Encourages efficient, dedicated (requested) involvement of knowledge providers and provides them with transparency and feedback

Whereas collaboration platforms can help companies manage the innovation process both internally and externally, it is also very important to define and use a structured method to deal with collaboration partners. Partnerships can vary greatly in size, intention and involvement. It is, therefore, necessary to have a differentiated approach when it comes to dealing with partners. This will depend on the type of innovation in which partners are involved and on the type of partner themselves (e.g., small entrepreneurial firm, external experts, scientist or exploitation partner).

Differences can lie in the formality of the partnership (i.e., open, non-exclusive versus strict contracts) or in the rigidity of the boundaries in which collaboration has to take place (for instance, non-negotiable product properties).

We believe that there is a common ground for all collaborative innovation partnerships to be successful. It relies on building mutual trust, an economic “win-win” and personal engagement. These elements will, invariably, help to provide a firm basis for successful collaborative innovation.

Figure 3 shows a framework that defines several instruments that incorporate all these elements. The idea is that there should be agreement with potential collaboration partners on (most of) these instruments beforehand to prevent conflicts during the collaboration. Agreement is needed, for instance, on innovation goals, planning, information sharing and exit strategies. This should be guided by a clear governance structure and partnering policy.

If the instruments and the related agreements are in place, the company can then put all its energy into the operational collaboration, making the partnerships much more effective, while at the same time doing justice to the differentiated approach that is needed.

CogniStreamer: supporting a culture of innovation

CogniStreamer helps companies embed innovation into their DNA by offering software platforms and services that facilitate the innovation process.

CogniStreamer helps companies innovate by:

► Providing a three-staged workflow that can help enrich the initial need statement and enable effective selection early on in the process, i.e.:
  ► Capturing the knowledge
  ► Ranking and filtering the ideas
  ► Assessing and selecting the concepts
► Offering collaborative enrichment tools to shape and process ideas, thereby encouraging broader participation and organization of ideas and concepts
► Facilitating crowd sourcing of large groups (with different security levels), both internal and external, e.g., more than 50,000 users

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In summary, there are some very practical things that can be done to improve the management of innovations. Key is making the right design decisions that allow for effective management later on in the process. In addition, as we have seen, the right collaborative platform and the right partnerships are two important elements that are essential for companies to have in place.

**Building tomorrow’s business via collaborative innovation**

Collaborative innovation is not easy; results are not always what were expected and many great ideas, in all different shapes and sizes, can, in the end, have little effect.

Yet, we believe that collaborative innovation has huge potential, but only when some prerequisites are met. Innovation managers all over the world are challenged to make the right (design) decisions when setting up collaborative innovation. This article defines several elements and actions that can help companies involved or wanting to be involved in collaborative innovation to be more successful in making those right decisions. Key is that you start with the business strategy in mind; be sure that you understand what it is that your company wants to achieve before you define how innovation can contribute. And be sure that the innovation strategy is clear on some specific, important aspects.

When your innovation strategy is set, make informed decisions on how to design the innovation process in terms of tooling and partnerships, and use different forms and tools for different innovation areas and partnerships. Collaborative platforms are more than just tools to stimulate ideation, they really can contribute to the management of the overall innovation process. Making full use of such a platform for your innovation goals is an important enabler for success. Secondly, creating clear and shared conditions for innovation with external collaboration partners ensures that innovation is taking place in the right areas, that roles and responsibilities are defined, and that collaboration will be a combined effort, after all.

If all these elements are in place, collaborative innovation is more likely to produce the intended result of faster and more radical innovations that actually help to build tomorrow’s business.
Collaborations can get bogged down in bureaucracy, relationships can fail to move beyond the transactional, and the smaller firm can become frustrated by what they perceive as the slow speed and risk aversion of the larger partner. The outcome is that just 19% of companies recently surveyed are very effective at realizing revenue increases, 16% at achieving margin increases and only 10% at generating intellectual property from these partnerships. Overcoming the challenges of collaborating will be critical to delivering agile innovation. Based on our experience, successful collaboration with entrepreneurs and start-ups requires companies to adopt nine principles.

1. Make the case for being agile: lead courageously
2. Cultivate an agile culture of experimentation: encourage ideas and embrace failure
3. Think simple, act fast: set clear and transparent objectives
4. Identify the right team: bring together the right internal team members with the right external partners
5. Determine the appropriate framework for each collaboration: understand the asymmetries and apply lean governance
6. Maintain open, frequent communication: align expectations and set rules of engagement
7. Adapt processes and break rules as necessary: avoid rigidity in project planning
8. Define and measure success: set parameters to conduct innovation health checks, but don’t obsess about perfection
9. Iterate and work incrementally: embed mechanisms to quickly learn from the experience and failure and be prepared to course correct and pivot

To understand more about these nine principles and to find out how leading consumer product companies are demonstrating their agile innovation, visit http://www.ey.com/GL/en/Industries/Consumer-Products/EY-delivering-agile-innovation.
Bridging the gap: ensuring execution on large infrastructure projects in Africa

Nearly three-quarters of infrastructure projects in Africa are simply not getting off the ground. We explore why insufficient funding is not the primary reason that Africa still has such a large infrastructure backlog. Looking at successful projects and those that have stalled or failed altogether can help to provide answers as to how Africa can bridge its infrastructure gap more successfully.
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Africa has seen great economic growth over recent years and is expected to continue growing at an average rate of 6% annually between 2013 and 2023. However, one thing that may hinder Africa’s growth prospects is its lack of infrastructure. The absence of adequate infrastructure is said to cost Africa approximately two percentage points off GDP growth per year.

In order to better understand Africa’s infrastructure deficit, EY has built a database of active large infrastructure projects in Africa, using information sourced from Africa Project Access. Of 196 active projects in our database, 141 (72%) are still in the conceptual, planning or pre-implementation phase. In other words, only 28% of projects are being implemented (see Figure 1).

Despite being recognized as being essential for the growth and competitiveness of a country, many large infrastructure projects are simply not getting off the ground. Lack of funding is often cited as the biggest reason behind Africa’s infrastructure gap. According to the World Bank, Africa needs to spend about US$93b annually until 2020 to bridge its infrastructure gap. As daunting as that sounds, half of this amount is already being financed by African governments, multilateral and bilateral sources of finance, and official development assistance (ODA). Europe is the biggest ODA financier in Africa, funding more than US$4b annually to the continent.

At the same time, new sources of finance are surfacing. For one, African governments have increased their own investments in infrastructure. In addition, regional development banks are playing an increasingly important role. For example, the African Development Bank recently signed a cofinancing deal with China worth US$2b for infrastructure and industrial development. There has also been an increase in intra-African investment, showing an improvement in regional integration. Crucially, as the second most attractive investment destination in the world, the continent has become an attractive market to private investors. In 2012, US$12.8b was invested by the private sector into new or expanded infrastructure projects in Africa. All 196 infrastructure projects in the EY database have some form of financing.

**Figure 1. Active infrastructure projects in Africa, by phase**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual</td>
<td>41%</td>
</tr>
<tr>
<td>Planning</td>
<td>27%</td>
</tr>
<tr>
<td>Pre-implementation</td>
<td>18%</td>
</tr>
<tr>
<td>Early implementation</td>
<td>10%</td>
</tr>
<tr>
<td>Implementation</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Africa Project Access; EY analysis.
“EY’s approach to capital programme assurance uses key lessons learned from challenging programmes that we have assisted clients in, and thereby embeds risk management strategies into our methods and approach.”

Tebogo Mosupi, EY Africa Programme Management Leader

Figure 2. Active infrastructure projects in Africa, by type

Source: Africa Project Access; EY analysis.

All of this suggests that it is not simply a lack of resources that is preventing African governments from plugging their infrastructure gaps. To give just one example, Mozambique currently has more than US$32b worth of active infrastructure projects. There is also significant evidence that many large infrastructure projects are being planned and initiated across the continent. For instance, one World Bank database records 27 new large infrastructure projects with private involvement to a total value of US$4.5b reaching financial or contractual closure in 2012, thus allowing work to begin.8

However, many of these never get off the ground or take far longer than expected to be completed. Uncertain time frames and unreliable execution are bound to further discourage potential investors, making it harder to secure finance in the future. Delayed projects also mean that planned infrastructure upgrades and maintenance fail to keep up with growing demand over time.

The answer to bridging the infrastructure gap in Africa does not, therefore, lie in identifying new sources of funding, but rather in ensuring that planned projects are completed within reasonable time frames. This will ensure that projects can start to deliver returns to their investors, helping to attract further investment in the future. Learning from the challenges experienced on current large infrastructure projects can help to identify the key areas to focus on to ensure future success. These major challenges include a lack of policy frameworks for infrastructure projects, poor financing structures, weak contract and
project management, as well as a lack of the necessary monitoring and evaluation throughout the lives of the projects.

**Develop policy framework**

**Governments can use a framework for their infrastructure goals to plan and prioritize potential projects**

Before entering into infrastructure projects, governments should begin by defining a suitable and appropriate policy framework that will guide both them and potential investors. Such a framework ensures good governance, due process and diligent planning. It is important for governments to evaluate their current situation in order for them to understand where they stand and, in turn, help define their infrastructure needs now and in the future. Governments should ensure that clear infrastructure policy goals and objectives are set. These goals need to reflect the long-term infrastructure vision of the country. This can help determine the short-term infrastructure investments that should be prioritized.

Factoring in how demand for infrastructure is likely to grow in the short to middle term is also important. As populations expand rapidly and economies grow, more and more people are becoming urbanized, and the rate of demand for infrastructure is increasing. For example, South Africa signed its Infrastructure Development Act in June 2014. The act is aimed at fast tracking regulatory decision-making and speeding up the implementation of strategic infrastructure projects.

In addition, strong governance institutions can help to ensure that longer-term infrastructure projects stay on track, even when political power in a country changes hands. All too often, politicians favor short-term projects that will show immediate results over longer-term, more complex but more essential infrastructure projects, because the electoral rewards for their success may be reaped by their successors. Strong government institutions, including parliament, government departments and state-owned enterprises, can help to ensure that infrastructure policy, funding and implementation follow a longer-term strategy driven by critical need rather than political imperative.

**Specify funding structures**

When conceptualizing an infrastructure project, there are several different financing structures governments may choose. These include entirely public projects, fully private investments or public-private partnerships (PPPs). The trick here is selecting the correct delivery structure that will yield the highest overall benefits. The decision criteria for governments should include the financing of the project, the type of contract model that will suit the project and the level of participation either the government would like to have, or will allow,

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**Regional integration is essential for delivering infrastructure in Africa**

African leaders have come together to form the Programme for Infrastructure Development in Africa (PIDA) Priority Action Plan, which includes a list of 51 infrastructure projects aimed at promoting regional integration. PIDA provides a common framework for African stakeholders to build the infrastructure necessary for more integrated transport, energy, information and communications technology (ICT) and water networks to boost trade, spark growth and create jobs. This is an example of how cooperation on the continent can be achieved to ensure that projects that cross borders can be more effectively prioritized, coordinated and implemented.
from the private sector. Due to the limits of public funds in many African countries, a common approach is PPPs. Not only can the private sector contribute much needed financing, but it is increasingly being used to design, build or operate infrastructure facilities.

This is a model that can prove to be particularly successful in filling the infrastructure gap in Africa, whereby private investors invest in commercially viable infrastructure; for instance, toll roads, passenger rail networks and smart metering. This ensures guaranteed returns for investors, as users pay for the use of such infrastructure, and also frees governments up to dedicate limited public funds toward freely provided infrastructure such as schools, hospitals, public sewerage facilities or rural road networks.

**Be conscious of contract management**

A common challenge for governments, once they have selected a funding structure for a project, is substandard contract management. Contracts can differ from project to project, determined by their structure and nature. Different types of contract include management and operating contracts, leases and concessions or joint ventures. The design of the contracts needs to safeguard the interests of both the government and the private partner(s). All too often, African governments enter into contracts that are less than beneficial to them in the long run, as private investors tend to have the capabilities or resources to ensure the terms of any contract meet their own interests.

Having a solid contract in place before a project starts is essential. However, the lengthy and complex nature of most large-scale infrastructure projects means that these contracts need to make provisions for unforeseen events and changes down the line. This is also why good relationships need to be maintained between public and private partners, so that a culture of mutual trust is built between the two parties.

**Prioritize project management**

Project management can help to ensure that infrastructure projects run on time, within the given budget and quality specifications, while meeting the given scope.

Infrastructure projects are almost always large scale and very complex. At the same time, governments are usually working on a number of projects simultaneously. Therefore, they need good project management in order to execute and deliver projects successfully. Infrastructure projects often cost millions of dollars, and any mishaps can have detrimental effects on the costs, time frame and quality of the project. In addition, the complexity of large infrastructure projects means there will be multiple stakeholders, all of whom can have an impact on the successful and timely delivery of projects. Sound project management can help ensure that all role players understand their responsibilities in getting the project executed properly.

“We are seeing a drastic increase in the monitoring and evaluation of projects by donors, as they need to ensure they invest in results-based projects and that funds are utilized effectively. This focus on public financial management will ensure there are proper systems and controls in place so that governments are accountable for the correct and agreed usage of funds.”

Joe Cosma, Africa Advisory Government & Infrastructure Leader
Figure 3. A holistic approach to managing your capital project portfolio

"Regional economic integration is essential for Africa to realize its full growth potential, to participate in the global economy and to share the benefits of an increasingly connected global marketplace."9

African Development Bank


EY’s approach to project management on large-capital projects emphasizes a holistic approach (see Figure 3). Effective project management on such projects has to start with how financing is structured, then address the implementation logistics of the project, all the while managing risks at every stage. Adopting such a broad approach to project management protects and empowers all stakeholders throughout the process, from concept to full operationalization of the project.

Persist with monitoring and evaluation

Once an infrastructure project is underway, regular monitoring and evaluation is required. Reviewing and assessing progress throughout the infrastructure project can help detect possible problems early on so that they can be resolved immediately or possible risks can be mitigated.

Adequate monitoring and evaluation of existing projects also plays an important part in attracting future investment, and ensures accountability and transparency for investors and citizens. Monitoring and evaluation throughout the project can also help to reduce wastage and eliminate the scope for corruption, which can plague large projects where vast sums of money are at play.

Conclusion

Infrastructure is the key to unlocking Africa’s true economic potential. It can make both living and doing business in Africa less challenging. With significant funds dedicated to addressing infrastructure backlogs on the continent, the focus now needs to be on how to execute on the plethora of ambitious planned projects.

By focusing on five key areas identified as being instrumental to success – policy frameworks, funding structures, contract management, program management, and monitoring and evaluation – the chances of effectively completing planned projects can improve significantly.

This, in turn, will bring greater confidence to prospective investors and can help to attract further infrastructure investment to the continent, bringing us one step closer to bridging the infrastructure gap in Africa.
Integrated medical management: setting a clear strategy and driving results

The goal of “medical management,” an emerging discipline within the health care sector, is to integrate the distinct processes of case management, disease management and utilization management, thereby achieving better clinical outcomes and reduced costs. We offer insight into a disciplined, structured approach that will help give health care providers a clear, integrated medical management strategy, an efficient operating model and technology enablers that will enable them to realize the full benefit of their investments in this new field.
The term medical management is not specifically and uniformly defined in the health care field, but generally, it refers to the integration of three specific disciplines – case management, disease management and utilization management – supported by population health and referral management activities (see Figure 1). The core idea is that this integrated approach will position the right health care professional at the right time with the right treatment. Patient satisfaction is also a key outcome, with the goal being that they feel their time is better utilized, their treatment is more effective and their overall experience is more positive.

The vision of a truly effective medical management model is that tighter integration of these disciplines – supported by new processes, technology and organizational roles – will improve overall health care outcomes while also driving down costs. The ability to simultaneously provide better care and lower average cost

Jumping into execution without a clearly defined strategy risks sub-optimized investments at best, and an organizational rejection of the concept at worst.

Figure 1. The activities and disciplines of medical management

- Population health management helps assess the continuum of care. It involves the stratification of patients into risk groups and the creation of care strategies based on each group’s needs. Its goal is to reduce costs by preventing illness, improving quality of life and enhancing health outcomes for those suffering from chronic conditions.

- Integrated referral management is a model for directing, monitoring and controlling patient referrals with the aim of achieving the most clinically driven and cost-effective outcomes. It involves a streamlined process and standard workflow to manage the life cycle of patient referrals. Its goal is to optimize the referral process, drive patient accountability and minimize disruptions.

- Case management is a collaborative process that assesses, plans, implements, coordinates, monitors and evaluates options and services to meet an individual’s health care needs.

- Disease management is a system of multidisciplinary efforts focused on improving the quality and cost-effectiveness of care associated with chronic illness.

- Utilization management is a coordinated set of techniques focused on balancing health care resources in order to provide patients with the right care at the right time.
is enabled by processes, technology and analytics. For example, predictive data elements, combined with tighter patient communications and scheduling, allows for earlier interventions and better, cheaper care. Intuitively, this approach makes sense to patients, providers and administrators, because high-quality, cost-effective health care is dependent on patients interacting with the right health care professionals at the right times to treat the right issues.

But in today’s environment, it’s widely understood that health care faces extraordinary challenges, both external and self-imposed, when it comes to attacking problems in a holistic, integrated manner. A huge amount has been written on the process, technology and organizational issues that inhibit integrated health care solutions – lack of standardized electronic health records, distributed-provider care models and unclear cost parameters are just a few of these fundamental issues. It is within these constraints that the medical management discipline needs to operate, creating unique challenges for health care providers as they evolve and develop this capability.

Recognizing the opportunity presented by medical management, many health care organizations have invested in disparate, tactical solutions – such as redesigning clinical operations workflows, creating new standard operating procedures or implementing new training classes. These tactical efforts are usually met with mixed success. Too often, medical management investments are not driven by a clear, integrated strategy. As a result, to use a medical analogy, it is the symptoms that are being treated rather than the patient as a whole. The remainder of this article outlines a path forward for organizations that are looking to embrace the full potential of integrated medical management and ensure the changes they make will stick.
The importance of a strategic approach
If medical management is to be a core capability within complex health care systems, it will require strategic transformation of systems, processes, data, organizational roles and performance metrics. Given the scope of this change, and the potential for material clinical and financial benefits, organizations need to approach this as a strategic management problem that requires rigorous planning. Jumping into execution without a clearly defined strategy risks sub-optimized investments at best, and an organizational rejection of the concept at worst.

A tightly focused strategic plan is an invaluable tool to get an organization focused on delivering large-scale, medical management change. Such planning exercises have many forms but, at a minimum, should include the following components:

► **Environment scan** – what are other health care providers doing in this space? How are patient needs and preferences changing?
► **Current-state review** – what is the organization’s starting point and level of maturity in key medical management processes?

How Navy Medicine implemented its Care Management strategic vision

To prioritize and implement strategic initiatives relative to its Case Management Program, the Bureau of Medicine and Surgery, Care Management Directorate proactively took steps to develop a formal plan and road map to define the program objectives and align the program direction with its leadership’s focus for change priorities.

This effort culminated in a two-day strategic visioning session in which key leaders, both internal and external to Navy Medicine (e.g., Defense Health Agency (DHA) and Veterans Affairs (VA)), came together to help define and shape the program’s future state.

This strategic plan served as a critical component of the program’s success, as it clearly defined the prioritized initiatives and future-state outcomes.

It also served as a key change management enabler by aligning leadership and stakeholders to the mission and objectives, while also ensuring alliance from other organizations going forward.
The complexity and cost of a major transformation – combined with what is often an unclear organizational vision regarding the purpose, scope and objectives of medical management – require a disciplined approach to investment priorities and timing.

- **Scope** – where should the organization focus efforts for change and, just as importantly, what areas are out of bounds?
- **Objectives** – what needs to be accomplished, and how will the organization operate or differ when the objectives are achieved?
- **Initiatives** – how do we chunk up the work into manageable projects and when can they each be completed?
- **Outcome metrics** – how will we quantitatively know if the organization is successful?

### Defining the operating model

Once the strategy has been clearly articulated, the next step is to define the medical management operating model. The term “operating model” is one that can have very different meanings to different people but, in this context, the operating model should define the operational infrastructure through which the strategy will be executed. By specifying the operating model, an organization is committing to a way of doing business both today and tomorrow, while also setting the parameters for future people, process and technology investments.

Many health care organizations still do not formally design their operating models, focusing their planning energy on budgeting or strategic planning. However, research indicates that organizations with a foundational, clearly defined operating model report significantly greater performance across a range of outcome metrics, including operational efficiency, customer intimacy, product or service leadership and strategic agility.

In the context of medical management, the end goal is an operating model with highly standardized processes (e.g., executing clinical pathways with minimal unwanted variation), but also highly integrated processes (e.g., clear hand off of patient data from one care delivery team to another). This presents a huge shift for many health care organizations with distributed facilities that operate with relatively low levels of process standardization and integration. In effect, many health care organizations are moving from the “bottom left” to the “top right” of the matrix shown in Figure 3.

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Reducing costs and improving the customer experience

At a prominent commercial integrated delivery system (IDS) organization, health care was siloed, and the organization wanted to simplify population management and improve the customer experience while reducing operating costs.

By developing a new operational strategy, implementing a system that allows one nurse to have a complete overview of the patient, and designing and implementing data analytics and reporting that provide insight into member demographic trends, the organization was able to:

► Reduce operating costs by centralizing member care delivery
► Improve patient care, since the primary nurse could now see all aspects of it, from medical history and lab results to prescriptions
► Enable the proactive identification of members at risk of chronic illness (such as diabetes, asthma or smoking) via the Population Health Management system, thus allowing early enrollment in disease preventive wellness programs
Executing this shift requires a blueprint for the operating model that describes how the strategy will be implemented in the following areas:

- **Process model** – how will processes be aligned in support of patient outcomes?
- **Organizational structure** – what new roles are required and what are the appropriate reporting lines?
- **Governance** – where will the decision-making authority reside for each process within the organizational structure?
- **Technology architecture** – what new data, systems and interfaces will be required to support the process model?
- **Operating locations** – what activities will be performed and where, and will any new locations or facilities be required?
- **Performance metrics** – how will we monitor the processes and then hold people accountable for results?

**Execution enables implementation success**

With a clearly defined medical management strategy and operating model, investments in operational capabilities can be built within the context of the broader vision and plan. This is because there is a greater understanding of the medical management architecture and the organizational “home” for new capabilities. As a result, there is a much greater chance of implementation success, with strong return on investment.

Ultimately, medical management is executed at the frontline of health care delivery. As such, implementation requires detailed standard operating procedures (SOPs), roles and responsibilities, skill profiles, and a robust training and education program. Position descriptions will also be required for new roles, which may be filled from existing resources or new hires into the organization.

**Real change, measurable results**

When done correctly, an integrated medical management model of clinical pathways represents a breakthrough in how health care organizations optimize the disciplines of case management, disease management and utilization management to drive improved clinical outcomes, lower costs and a better patient experience.

But health care providers should be cautious about the “ready, fire, aim” approach with major medical management investments. The complexity and cost of a major transformation – combined with what is often an unclear organizational vision regarding the purpose, scope and objectives of medical management – require a disciplined approach to investment priorities and timing.

An integrated framework that clearly defines the medical management strategy, operating model and execution components will set the foundation for real change with measurable results.

The vision of a truly effective medical management model is that tighter integration of these disciplines – supported by new processes, technology and organizational roles – will improve overall health care outcomes while also driving down costs.
For most wealth managers, measured improvements have been made in channeling IT expenditure toward change activities, with increasing amounts of IT spend aimed at developing new functionality. Yet, despite sizeable outlays, wealth managers are not always left with the sense that their IT is fully in tune with the most important business priorities.
A s a rule, IT costs in banking are high compared with other industries. Banks must fulfil exacting regulatory requirements, resulting in IT costs that do not contribute to operating income. Banks also rely heavily on IT as part of their front-office distribution and back-office operations. Consequently, IT costs measured in terms of operating income as well as operation expense are higher than in other industries.

To give some perspective on how IT costs vary across the different banking segments, here are some examples. It is transaction banks that typically display the highest IT costs (relative to operating expense). They rely heavily on superior levels of automation and straight-through processing in order to drive down unit costs; a key competitive advantage in transaction banking. On the other hand, it is asset managers who commonly display the lowest IT costs relative to operating expense. While the IT costs of wealth managers are significantly lower than those of transaction banks, they are still higher than those of asset managers. Generally, wealth managers and retail banks exhibit similar levels of IT spend relative to operating expense.

Improving IT performance in global wealth management

EY’s annual IT benchmarking of wealth managers has one primary objective: to analyze general IT performance data and their relationship to business results to enable a better understanding of how these are influenced by strategic factors and choices. In this year’s benchmarking exercise, we polled senior IT executives from 27 wealth managers across 3 major wealth management hubs: Switzerland, Luxembourg and Singapore. Participants ranged from local wealth managers operating within a single market to globally integrated players with clients across multiple jurisdictions, both onshore and offshore.

There is no straight-line relationship between IT spend and business returns. High IT expenditure does not always equate to superior performance. 

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offshore. The sample also covered both pure-play wealth managers with focused client offerings, as well as diversified wealth managers providing a broader range of banking services.

The report shows the relative business performance against several technology parameters, such as IT cost, IT architecture, staffing levels and sourcing models. We calculated key IT-cost ratios in order to identify the positions of individual wealth managers in their IT investment cycles.

The key ratios calculated are IT cost as a percentage of operating income (IT-cost-to-income ratio), IT cost as a percentage of operating expense (IT share of cost), average IT cost per full-time equivalent (FTE) and average cost per IT FTE. Additional IT-cost ratios were the IT-outsourcing ratio, IT-change ratio and IT-capital expenditure ratio. In terms of business results, we considered normalized operating income.

According to our survey, IT costs represented 16.3% of operating expense in 2013, an increase of 0.4 percentage points compared with 2012. IT costs as a percentage of operating income increased slightly from 11.2% in 2012 to 12.5% in 2013 (see Figure 1).

The development of IT budgets varied from region to region, depending on the differences in growth cycles and unit staff costs. In Switzerland, IT budgets grew by 36.2% between 2009 and 2013. In the same period, operating income grew by 5.2% and operating expense by 29.6%. The percentage of IT cost in relation to total operating expense remained fairly flat, from 16.2% in 2009 to 16.6% in 2013. Measured in terms of operating income, IT costs amounted to 13.8% in 2013. IT cost in

Note: all US$ figures are calculated based on fixed 2013 exchange rates.
Source: Digital disruption and the game-changing role of technology in global wealth management, EY, 2015.
Figure 2. Wealth managers are spending less on “lights-on” costs and increasing expenditures on change activities.

### Percentage of total IT spend

<table>
<thead>
<tr>
<th>By change ratio</th>
<th>2009-10</th>
<th>2011-12</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33.1</td>
<td>33.8</td>
<td>40.4</td>
</tr>
<tr>
<td>Change-the-bank spend</td>
<td>66.9</td>
<td>66.2</td>
<td>59.6</td>
</tr>
<tr>
<td>Run-the-bank spend</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By capital expenditure ratio</th>
<th>2009-10</th>
<th>2011-12</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13.5</td>
<td>13.6</td>
<td>15.7</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>86.5</td>
<td>86.4</td>
<td>84.3</td>
</tr>
<tr>
<td>Operating expenditure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### By cost type

- Others: 7.9
- Occupancy: 5.8
- Hardware: 11.1
- Software: 19.7
- Personnel: 26.1
- Outsourcing: 29.4

### By functional area

- Others: 5.2
- Voice and data: 3.7
- IT support functions: 5.8
- End-user computing: 11.8
- Data center: 29.0
- Applications: 44.6

Wealth managers who achieve superior returns for lower IT expenditures are much better at aligning IT spending with the organization’s strategic priorities.

**Notes to Figure 2**

1. Full category breakdown is only available for reduced sample size.
2. Functional area category “applications” cover both maintenance and development.

Source: Digital disruption and the game-changing role of technology in global wealth management, EY, 2015.
relation to banking FTE fell to US$57,970, a decline of 5.5% compared with the previous year.

In Singapore, operating income and operating expense grew by 35.5% and 41.7%, respectively; in Luxembourg, operating income and expense declined by 29.7% and 26.9%, respectively. During the same period, IT budgets in Singapore grew by 64.6% and, in Luxembourg, they declined by 2.2%. Singapore had the lowest IT share of cost at 14.0% in 2013, compared with 16.2% in Luxembourg and 16.6% in Switzerland. In comparison with other regions, wealth managers in Singapore appear to be underspending on IT.

**IT cost distribution**

For the purposes of our study, total IT spend comprised all the various types of IT expenditure that occur across every IT-related function, e.g., operations, application development and maintenance, IT support, and voice and data.

Our analysis compared “run-the-bank” and “change-the-bank” IT spend. By run-the-bank spend, we mean any expenditure required to maintain existing IT operations without adding new functionality. Change-the-bank refers to investments into innovations, primarily in application development aimed at evolving and improving current IT functionality.

We found that wealth managers are spending less on everyday IT costs (what is referred to as “lights-on” costs). Instead, they are targeting larger proportions of their IT budgets toward change-related activities. For example, between 2009 and 2012, these change budgets increased from 33.1% to 33.8%, relative to total IT spend. In 2013, the change ratio increased to 40.4% of total spend (see Figure 2).

This increase in change-the-bank spend demonstrates that wealth managers are developing new IT functionality and improving business capabilities through IT. At the same time, a reduction in run-the-bank spend illustrates that wealth managers are finding ways to run their IT operations more efficiently. The slight reduction in run-the-bank spending may call for some new investments to reduce IT-landscape complexity and redundancies and to retire legacy systems. Change-the-bank spending will need to be managed proactively through continuous project planning and prioritization, tight business cases for all large projects, and further optimization and standardization of application development processes.

Capital spend ratios remained steady between 2009 and 2012, and increased in 2013, peaking at 15.7%, compared with 13.5% in 2009 and 2010.

**Making IT spend more effective**

Given the current levels of intense competition and margin contraction, wealth managers are trying to stretch capital and operating budgets and do more with less.

The quality of IT, measured in terms of application availability, degree of automation and length of processing times, significantly influences business success and brand image. This is particularly so when considered from a customer satisfaction perspective or from a potential loss of business viewpoint, due, for example, to systems being down or not being user friendly.

However, and often despite large outlays on technology, wealth managers are not always left with the sense that IT is fully
taking into account or “in tune” with the most important business priorities.

As part of our effort to understand the return on IT investments for wealth managers, we studied the relationship between financial performance and IT spend. As a measure of financial performance, we took annual operating income and, as a measure for IT investment, we took total annual IT cost; both values were normalized over banking FTE. This analysis helped us identify the players that spend carefully on IT and successfully apply these investments to capture business value.

There is no straight-line relationship between IT spend and business returns. High IT expenditure does not always equate to superior performance. Spending more on IT clearly does not translate into above-average operating income and, some wealth managers with large IT budgets have trouble in leveraging their investments to generate high-revenue growth.

Interestingly, scale does not guarantee IT cost advantages. Larger players in our sample did not derive scale advantages and lower IT unit costs due to their size. More business volume leads to a larger IT footprint and more complexity, which becomes more difficult to manage effectively.

As part of our analysis, we have segmented the players participating in our benchmark into four categories, which are detailed here (see also Figure 3).

**Effective business enablers.** Our findings illustrated that 17.4% of wealth managers were able to generate above-average returns while investing significantly less on IT than their peers (upper-left quadrant in Figure 3). This group maintained a low level of IT spending but successfully put IT investments to good business use. The players in this group can further optimize their IT spending portfolio as well as selectively rebalance IT investments to stay on top of market developments. Building capabilities in strategic areas such as digital or big data will allow IT to exploit innovations quickly.

**High IT spenders.** We found 17.4% of wealth managers exhibit above-average IT spending but below-average operating income (lower-right quadrant in Figure 3). For this group, IT investments do not result in proportional business returns. It is likely that these players spend too much on running their daily operations and too little on innovation that would set them apart from their competitors. High IT spenders should reduce spending, selectively invest to improve business performance and achieve better alignment with business objectives. This can be done by evaluating IT projects with regard to benefits and cutting projects that are not strategic.

**Heavy IT transformers.** We discovered that 21.7% of wealth managers spend heavily on IT and see proportional business returns coming out of these investments (upper-right quadrant in Figure 3). The majority of players in this group have undergone high-impact IT-enabled transformation programs, resulting in IT investments that are greater than those of their peer group. Over time, heavy IT transformers should aim to cut back spending without losing efficiency and limiting innovations. These players should improve their governance and performance-management techniques to align IT spending more strongly with priorities, once the current phase of transformation is complete.

**IT executors.** A large proportion of wealth managers (43.5%) do not invest heavily in IT, but neither do they see high levels of business return for their IT investments (lower-left quadrant in Figure 3). To improve performance, this group should focus current IT spending more on improving and innovating front-office tools and enablers, e.g., mobile banking or client analytics.

**Three skills to master**

Our experience shows that players who are best at ensuring their everyday IT spending are efficient, and their IT investments target the highest-impact projects and master three skills: strategic alignment, controlled demand management and forceful complexity management.

**Strategic alignment**

Wealth managers who achieve superior returns for lower IT expenditures are much better at aligning IT spending with the organization’s strategic priorities. They develop their IT strategies in close cooperation with the business by using formal governance processes and engaging their broader stakeholders and influencers.

To reduce the number of non-critical projects entering the pipeline, leading players require that each incoming change initiative articulates the expected return on investment as part of the approval application.
Figure 3. Leading wealth managers spend less on IT than their peers but are able to generate above-average operating income

Normalized operating income versus IT spend

Operating income per banking (employee US$)

0 20 40 60 80 100 120 140

1,400
1,300
1,200
1,100
1,000
700
600
500
400
300
200
100
0

Effective business enablers

Mean = 453

Heavy IT transformers

Mean = 54

IT executors

High IT spenders

Actions to influence the trajectory

A

Effective business enablers

- Rebalance IT investments
- Build capabilities to exploit emerging innovations quickly

B

Heavy IT transformers

- Align IT spending with priorities
- Redirect spending after transformation

C

High IT spenders

- Cut non-strategic IT projects
- Ensure alignment with business
- Prioritize development and accelerate delivery

D

IT executors

- Increase front-end investments to build out new sources of income
- Redirect back-end spending to boost cost performance

Average assets under management (AuM)

Note: all figures relate to 2013 (full year) and all US$ figures are calculated based on fixed 2013 exchange rates.

Source: Digital disruption and the game-changing role of technology in global wealth management, EY, 2015.
By shoring up discipline and governance around key IT-complexity drivers, wealth managers can reduce operational costs and improve quality and the time to market of solution delivery.

Figure 4. Regulatory compliance still at the very top of the CIO agenda, with information protection a close second

<table>
<thead>
<tr>
<th>Priority expenditure areas for the coming year</th>
<th>Percentage of responses rating priority areas as high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring regulatory compliance</td>
<td>2014</td>
</tr>
<tr>
<td>Increasing information protection</td>
<td>72.0%</td>
</tr>
<tr>
<td>IT cost optimization</td>
<td>68.0%</td>
</tr>
<tr>
<td>Front-office process automation and improvement</td>
<td>64.0%</td>
</tr>
<tr>
<td>Reducing cost of ongoing support</td>
<td>64.0%</td>
</tr>
<tr>
<td>Upgrading existing systems</td>
<td>56.0%</td>
</tr>
<tr>
<td>Improving IT service continuity</td>
<td>52.0%</td>
</tr>
<tr>
<td>Improving IT services levels</td>
<td>52.0%</td>
</tr>
<tr>
<td>Improving IT staff skills (including training)</td>
<td>52.0%</td>
</tr>
<tr>
<td>Mobile devices and apps for relationship managers</td>
<td>48.0%</td>
</tr>
<tr>
<td>Back-office process automation and improvement</td>
<td>48.0%</td>
</tr>
<tr>
<td>Communication</td>
<td>46.2%</td>
</tr>
<tr>
<td>Performance and capacity management</td>
<td>40.0%</td>
</tr>
<tr>
<td>Upgrading IT infrastructure</td>
<td>37.5%</td>
</tr>
<tr>
<td>Governance and organization improvement</td>
<td>33.3%</td>
</tr>
<tr>
<td>Reducing the number of technologies</td>
<td>28.0%</td>
</tr>
<tr>
<td>Outsourcing or insourcing of business functions</td>
<td>21.7%</td>
</tr>
<tr>
<td>Upgrading desktops and laptops</td>
<td>20.0%</td>
</tr>
<tr>
<td>Outsourcing or insourcing of IT functions</td>
<td>16.7%</td>
</tr>
<tr>
<td>Cutting the number of IT consultants and temps</td>
<td>8.3%</td>
</tr>
<tr>
<td>Increasing IT staff headcount</td>
<td>8.0%</td>
</tr>
<tr>
<td>Bringing outsourced functions in-house</td>
<td>4.2%</td>
</tr>
<tr>
<td>Social media</td>
<td>4.2%</td>
</tr>
<tr>
<td>Cloud computing implementation</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: Digital disruption and the game-changing role of technology in global wealth management, EY, 2015.
to focus on the value creation levers that IT can shape and change.

**Controlled demand management**
Leading wealth managers endorse highly controlled demand-management processes to govern project selection and funding. Their goal is to realize the value of IT investments by establishing controls on incoming demand, thereby effectively coordinating resources and providing transparency on performance over time. To reduce the number of non-critical projects entering the pipeline, leading players require that each incoming change initiative (e.g., for application development) articulates the expected return on investment as part of the approval application. This ensures that resource consumption and returns are made transparent, and that management has visibility over IT spending.

**Forceful complexity management**
Leading wealth managers are very disciplined when it comes to cutting complexity across multiple layers. They do this by applying strong governance frameworks, implementing authority boards for the review and design of architecture, and streamlining the application and infrastructure environments. By shoring up discipline and governance around key IT-complexity drivers, wealth managers can reduce operational costs and improve quality and the time to market of solution delivery.

**Looking ahead**
Technology has always been at the heart of how wealth managers do business. In the past, they have targeted investments at the back office, driving efficiencies and cost reductions. Going forward, the emergence of digital technologies for delivering services requires wealth managers to invest in their front-office digital capabilities. The multiplication of channels for doing business will require larger outlays on IT than previously.

As wealth managers position themselves within their specialist areas, more and more business executives are acknowledging the strategic value that technology and IT can provide to their business beyond just cutting costs.

But as business executives look to invest in new capabilities to capture emerging growth opportunities, many CIOs are still concentrating on ensuring regulatory compliance, client data confidentiality and optimizing costs. This is one of the findings from our survey, which asked IT executives within wealth management to state their spend priorities for the coming year. Figure 4 shows how they responded. Over the next 12 months, their top three IT spend priorities are regulatory compliance (rated by 92% of respondents as a top priority), information protection (72%) and IT cost optimization (68%).

Compare this with front-office process automation and improvement (rated by 64% as a top priority) and back-office process automation (48%). Although the data suggests that many wealth managers have now addressed the back office and are looking toward other areas to achieve additional improvement and efficiency.

The smart application of technology is proving to be a source for competitive advantage, providing ample opportunity to engage customers, achieve efficiencies, and promote better and more consistent alignment within an organization. But only for those who are prepared. We expect technology to take on an increasingly lead role in driving business change toward digitization.
Profitability improvement: reaping the dividends

The global economy may be slowly recovering, but aggressive pricing by competitors is forcing companies to look inward and focus on improving internal efficiencies. Many of these in-house initiatives have been moderately successful, but there still remains a sense that more could be done. In response, this article explains what companies could do to improve the benefits from performance improvement initiatives.
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With the global economy stuttering toward recovery, organizations are under pressure to focus on improving internal efficiencies with the goal of sustained market share and profitability margins. Top of COOs’ minds are operations improvement initiatives aimed at cost reduction and profitability enhancement. At the same time, it is becoming increasingly difficult for companies to identify opportunities for incremental improvements.

While it is easier to concentrate on plant operations as an area for improvement in manufacturing industries, the key to successful benefit realization lies in identifying the right levers for cost reduction. Specifically in process industries, the problem is all the more complex, as the nature of manufacturing set up makes it difficult to visually identify opportunities and demands a thorough diagnosis.

In our experience, we have found a structured approach to performance improvement (PI) exercises to be the differentiating factor between an acceptable result and a great success. This is because it leads to the identification of the right improvement levers and introduces the key ingredients that will enable the organization to enjoy sustainable benefits. In this article, we will discuss what those ingredients are and, thus, how to carry out a successful PI exercise.

Defining the vision and identifying a champion

A PI exercise is not a one-off initiative, but a journey that requires coordinated and calibrated steps. As with any long-term project, it is important for senior

In process industries, the problem is all the more complex, as the nature of manufacturing set up makes it difficult to visually identify opportunities and demands a thorough diagnosis.
management to develop an overarching vision for improving competitiveness and enhancing efficiencies. Gaining acceptance of this vision will help to prepare the ground for the types of changes that an exercise like this typically brings about. It also encourages cross-functional participation and facilitates the cultural changes required to develop long-term sustainability of the benefits realized.

In addition to a clearly articulated vision, the organization must also identify an "initiative champion" from the ranks of senior management to act as both an enabler and a signal to the rest of the business. By a "signal," we mean that the champion demonstrates the seriousness of leadership’s intentions and hence facilitates adoption of improvements across the cadre. It also promotes inter-functional cooperation, which becomes critical in the later stages of implementation.

Using a structured framework to build a comprehensive approach

Undertaking a PI exercise can be an overwhelming prospect, and the related risk is that the initiative can get bogged down in specifics and details that may not yield much in the way of benefits later down the line. It also runs the risk of being influenced by biases arising out of individual’s experiences or recent effects.

A well structured framework, such as the one shared in Figure 1, results in a greater likelihood of all spend bases being covered and all applicable throughput levers being analyzed. It also enables the project team to prioritize opportunities quickly and focus on those that will deliver the maximum benefits to the organization.

Building the right team

The nature of a PI exercise means that it comprises a set of multiple, cross-functional initiatives driven by a common vision to improve competitiveness and enhance efficiency. It is natural that a number of small groups and teams would be required to focus on specific opportunities and contribute toward the achievement of the identified goals.

While having the right stakeholders in the team ensures cross-functional buy-in and participation, having too large a team can lead to wasted time due to endless discussions and decision paralysis. Hence, the selection of the team is a critical part of a PI exercise. Some of the aspects that project leaders should keep in mind are as follows:

a) Process and spend base owners (PSOs) must have ownership of the changes that are recommended in the exercise. Therefore, involving them in any improvement initiatives is an important consideration when building the team.

b) Top management must be bought into and supportive of the team. For example, the PSOs would be from different functions and, in many cases, spread across geographies. Hence, driving the exercise from a top management level and including the initiative outcomes into the key result areas (KRAs) of decision-makers is essential.

Teams would be required to run specific profitability-improvement initiatives. This means that different team members...
As a result of the structured approach and internal teaming, the organization saw its average monthly production increase by over 15% and procurement spend go down by over 5% across the majority of purchase categories.

Figure 2. Guidelines for selecting PSOs for PI initiatives

<table>
<thead>
<tr>
<th>PI area relevant to PSO</th>
<th>Recommended</th>
<th>Optional or need based</th>
</tr>
</thead>
</table>
| Reliability improvement | • Maintenance  
• Production  
• Technical and R&D | • Plant finance  
• Instrumentation  
• Stores  
• Bagging or storage and dispatch  
• Planning |
| Capacity enhancement | • Production  
• Technical and R&D  
• Maintenance  
• Planning | • Plant finance  
• Procurement |
| Specific consumption reduction | • Production  
• Technical and R&D  
• Maintenance | • Planning  
• Plant finance |
| Unit cost reduction | • Procurement  
• Technical | • Production  
• Maintenance |
would be needed at different stages of the project — ranging from data capture and analysis of root cause identification to solution design and implementation. A structured approach to this critical activity means that all key human resources are identified upfront and that the time requirements from the PSOs are clearly articulated and understood by all. Figure 2 provides such a structure and can be leveraged or built upon to identify the right personnel to participate in a PI exercise.

**Opportunity identification should be supported by analysis**

One of the most common pitfalls in a PI exercise is a reliance on anecdotal evidence and half-remembered impressions. While these are good starting points, not using a robust analysis to filter opportunities can lead to a significantly lower benefit realization and hence waste an organization’s collective efforts.

With most manufacturing plants supported by enterprise and resource planning (ERP) systems, such as SAP, access to data is no longer a challenge.
A PI exercise is not a one-off initiative, but a journey that requires coordinated and calibrated steps.

Hence, it is imperative that the team undertaking the PI exercise validates each of the opportunities identified through a robust data analysis. This provides incontrovertible support for the need for change in the organization and avoids the chances of opinion-based debates on the merits of findings.

Once again, a structured approach is required to identify the relevant methodologies and necessary data for the proposed analysis. The way to go about this is to begin with observations or symptoms and convert them into analyses and data requirements, thereby digging deeper. Figure 3 outlines the relevant approach.

A handy tool to expedite the process is a diagnostics toolkit that helps identify the main areas of focus for profitability improvement, as well as key analyses to be carried out, and data required to allow meaningful insights to be inferred from the review. Figure 3 outlines the relevant approach.

Using the right approach for validating opportunities

Depending on the PI area, varying approaches for validating opportunities should be applied. For example, for plant operations-related themes – such as reliability improvement or specific consumption reduction – detailed root cause analysis (RCA) and brainstorming can be leveraged to develop the action agenda. Depending on the skill levels (and previous exposure) of the relevant PSOs, they may need to be trained in analysis techniques if they are to identify improvement initiatives successfully.

Alternatively, the process may be run through facilitated workshops aimed at theme-specific RCAs. This approach, however, requires a higher level of facilitation expertise to ensure that the right initiatives are identified.

For the unit cost reduction theme, a key aspect is to lay out the entire spend base and identify the relevant procurement levers applicable to individual spend categories. While these may vary across categories and geographies, some spend categories are typically more amenable to specific levers.

Building organization-wide momentum

While building the right teams helps with the identification of relevant opportunities and promotes greater ownership from the PSOs, implementation requires involvement from people at every level within the business. There should be representation across the full hierarchy. Hence, the importance of generating the right momentum and participation throughout the organization should not be underestimated if successful and sustained benefit realization is to be achieved.

In our experience, a focused – and well publicized – “idea campaign” is a critical element when it comes to building such momentum. A detailed plan is normally developed to drive the campaign, which is managed through a structured and transparent process of idea generation, filtering, selection, prioritization and implementation. The campaign helps generate visibility and a sense of ownership around the profitability-improvement initiative. Simultaneously, it plants the seeds for the change management process, across all the company’s people, through active, voluntary and encouraged or incentivized participation in the organization-wide PI exercise.

Developing SMART² action plans

Once the opportunity identification, analysis and RCA have provided the necessary direction for solution design, the project leaders next need to prioritize the solution initiatives. This should be carried out based on factors such as the degree of change required, time frame for implementation and anticipated value to the organization.

Having identified a set of initiatives, detailed action plans need to be developed. Some of the key considerations when developing these plans are:

a) Clearly articulate the end goal(s)

b) Identify the relevant steps required to achieve the end goals

c) Define who has ownership for each activity and who the participants are

---

1. RCA may be conducted through multiple approaches, including Ishikawa Diagram, 6 Whys, 8M and the Delphi Method. Different approaches work under different scenarios and can be perfected through practice.

2. Specific, measurable, assignable, realistic and time-bound.
Robust data analysis provides incontrovertible support for the need for change in the organization and avoids the chances of opinion-based debates on the merits of findings.

**Figure 4. A structured approach to monitor, support and sustain PI initiatives**

1. Identify which outcomes to monitor. For each outcome, define the measure, data source, measurement frequency, owner, targets and escalation matrix.
2. Conduct periodic monitoring as per the monitoring plan.

**Performance in line with expectation?**

- **Yes**
  1. Devise recognition and incentive programs for successful implementation and completion of initiatives - involve senior management
  2. Develop a program for celebrating early wins
  3. Administer the recognition and celebration programs

- **No**
  1. Set up mechanism for identifying cause(s) for deviations - involve a cross-functional team for cause identification and solutions design, if required
  2. Identify the team for taking corrective action
  3. Devise corrective steps, measures and targets
  4. Establish early symptoms to identify need for further intervention
  5. Get senior management buy-in and sponsorship

**Close and document successful closure**

**Monitor**

1. Support
2. Sustain

**Ongoing initiatives**

**Correlative actions and redesigned initiatives**

**d)** Assess progress by means of well-defined milestones
**e)** Detect likely risks and explore mitigation strategies

It is essential that the identified actions are SMART so as to facilitate ownership, transparency and control.

**Monitor, support and sustain**

After developing the SMART action plans, work can really begin on driving improvements across various themes. It must be realized, however, that everything up until this stage has only provided the backdrop for achieving the goals of the PI exercise. The real benefits are derived through sustained implementation of the identified initiatives. This requires a structured approach to monitor, support and sustain these initiatives. A typical approach to sustainable initiatives’ roll out and closure is outlined in Figure 4.

The sponsorship and participation of top management in this stage is crucial. This should ensure adequate rigor in both monitoring the activities and taking corrective steps in a timely fashion. It will also help to keep morale high via the celebration of successes and the recognition of effective contributions.

**Rewarding the effort**

A PI exercise is a journey that requires careful planning and execution. While the rewards of a successful implementation can more than adequately compensate for the challenges faced in the execution of such an initiative, it needs a team effort in which different people need to play different roles at different stages. It requires support across the organization, from top management through to the operators and workers. This means that strategies need to be developed to help engage and acquire that support. Participation of internal stakeholders, comprehensive coverage and in-depth analysis will all enable an organization to identify the most beneficial opportunities. Development of SMART action plans, involvement of PSOs and structured and regular supervision from top management are key to successful solution implementation. Adequate support, guidance and recognition can be ensured through direct sponsorship from senior management from the very outset of the exercise.

A profitability improvement journey adhering to these basic guidelines is far more likely to reap rich dividends for the organization.
How profitability improvement can work in practice

We recently assisted an India-based chemicals and fertilizer manufacturer and supplier with a PI exercise that resulted in significant profitability benefits. The company was very successful in its domestic market and was also fairly well established in the international market.

However, margins were under pressure due to increasing imports, higher competition and government policy changes, especially in the fertilizer business. For this reason, the company’s management decided to pursue a PI exercise with the help of EY.

EY approach

We began by helping the client form a core team to ensure representation from all the key PSOs. The project (and, therefore, the team) was given its own name (ACE), as we find this helps to increase visibility of – and association with – the initiative. The ACE team comprised members from EY as well as the client’s core team. The project launched with a formal kickoff, during which the client’s management circulated special welcome messages and guidance to ACE members and the wider organization.

One of the ACE team’s first tasks was to conduct a structured analysis of the organization’s operations. The data was captured from the ERP system and cross-validated with monthly management reviews as well as quarterly financial results. Preliminary analysis was carried out in relation to data from the 12-month period immediately prior to the start of the ACE project. For selected areas – in particular, procurement history and

Figure 5. Preliminary focus areas

- Increase in long-term sourcing and reduction of spot buys
- Vendor performance management and consolidation
- Reverse auction for select categories
- Improve purchase response time
- Manage risk and hedging of prices

- Reduce slowdown or shutdown due to various reasons
- Improve the process for plant performance data recording, monitoring and review
- Reduce time spent on cyclical shutdowns
- Improve maintenance activity workflow, recording and response time

- Eliminate stock-out for critical and backup spares
- Rightsize the inventory of all spares and consumables
- Ensure timely availability of spares and consumables

Inventory

Procurement Manufacturing
equipment maintenance — the data analysis spanned records over a five-year period.

Observations and actions

The analysis highlighted the need to focus on three key dimensions. These were procurement, inventory and manufacturing. For each of these dimensions, specific areas were identified for detailed action and improvement (see Figure 5).

Each focus area had its own dedicated team that was tasked with identifying improvement initiatives. The teams comprised all key PSOs and were charged with direct responsibility for specific initiatives and monthly reporting to senior management.

Our analysis highlighted that the organization’s manufacturing operations were seeing significant day-to-day variations in terms of production and consumption levels. The manufacturing capacity of the plant was not fully utilized, and average utilization levels were significantly lagging industry peers’, as well as management’s, expectations.

The ACE team mapped the variations and, through structured RCA — for which we also conducted training so that the client team members felt they could make more effective contributions — we identified the addressable causes that needed action.

Rollout and results

We introduced a detailed mechanism of “review, response and reliability” as part of the rollout of the monitoring and support process (see Figure 6). This helped identify the improvement areas and actions in real time, incorporating the direct involvement of all PSOs in the plant. Additionally, the weekly review and monitoring mechanism instilled a sense of urgency and importance in the ACE program.

To support and facilitate the review process, we assisted in developing a “dashboard” that helped identify performance deviations, plant issues and focus areas through a tighter monitoring and observation system. This was further developed to track the benefits generated through the ACE project — to highlight success stories and celebrate quick wins. The monitoring and review system was underscored by a recognition and incentive program under the direct mentorship of the CEO. The teams working on the various initiatives got the chance to present their outcomes and results to the CEO, and were rewarded for their contribution.

As a result of the structured approach and internal teaming during ACE, within nine months of the rollout of the program, the organization saw its average monthly production increase by over 15%. At the same time, the procurement spend went down by over 5% across the majority of purchase categories.
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