

# OPTIMIZING OPERATIONAL EXPENDITURE

A more effective approach than just cost reduction



**Dramatic portfolio shifts in the pharmaceutical sector, such as the recent deals between Novartis and GSK, Merck and Bayer, are becoming common as companies seek to secure their future positions in a fiercely competitive marketplace. Yet even as they undertake these high-level strategic manoeuvres, businesses are under immense pressure from shareholders to deliver attractive returns year-on-year. As a result, many continue to look for new ways to reduce operational expenditure in order to boost the bottom line.**

**When they look at operational efficiency, are they looking in the right place?**

Statistics show that the pharmaceutical industry, for example, lags well behind others in terms of optimizing operating expenditure. Overall equipment effectiveness can be up to 80% lower than in the consumer packaged goods industry (ref PharmaManufacturing).

Industry analysis shows that if the pharmaceutical industry improved its operations by just half of how other industries are performing, earning profit margins would increase by 7.5%, inventory worth up to 11% would be made available and the industry as a whole could save approximately €135 billion a year (ref AT Kearney). But to achieve this, it will require a shift in focus.

## Traditional cost-cutting needs rethinking

Traditionally pharmaceutical companies aiming to cut operational expenditure have targeted areas such as labor costs or have reduced production output in a bid to make savings. But cutting labor costs aggressively can undermine vital R&D capability, while constantly trimming production can hinder a company's ability to meet demand.

One area of operational expenditure that has been largely overlooked, but which has substantial potential to deliver savings, is the cost and use of indirect materials, such as water, energy, maintenance and hidden value in assets. Although indirect materials typically account for only 4% of a pharmaceutical plant's total costs (see figure 1), this figure is set to grow.

## The cost of natural resources will grow

In the case of water, population growth, drought and regulation are set to push up water prices over the coming years. More than 40% of the world's population that will be living in areas of high water stress in the future (ref UnWater). The chemical and pharmaceutical sector uses over one million mega-liters of water each year and in 2014 the cost of this water will exceed €350 million.

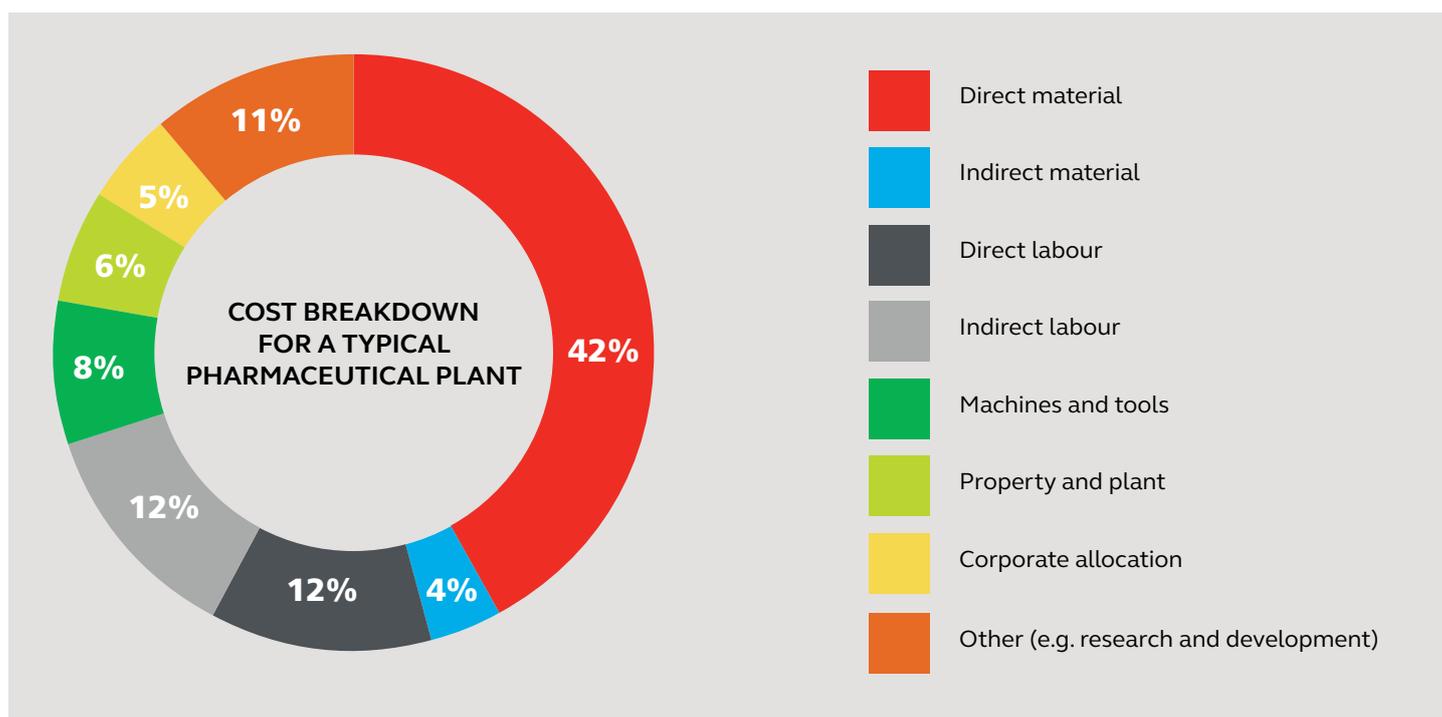
In the case of energy, the sector in Europe consumed the equivalent to 54 million tons of oil in 2010 (ref Eurostat / Cefic Chemdata International). Since then, consumption and costs have continued to increase as companies' operations have expanded and as a result it is clear that energy prices are becoming ever more of a concern for the industry as they have a significant impact on the bottom line. For example, BASF interestingly, recently announced for the first time in history they are looking to invest more outside the EU than ever before due to high energy prices.

Beyond price, there are further financial considerations associated with buying and using these two key resources. Energy efficiency is already a well-established part of the corporate and social responsibility (CSR) and sustainability agenda. Meanwhile, the responsible sourcing and use of water is taking on a growing importance within the same context. Businesses committed to safeguarding their reputation for corporate responsibility – and the commercial value attached to that – have no option but to meet the challenge of developing sustainable operations.

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Source: National Institute for Pharmaceutical Technology and Education

## Better management of natural resources can deliver significant savings

These trends – the rising demand of limited resources and the growing importance of CSR – mean the way natural resources are used in the manufacturing process is set to have a growing impact on the cost of operations. A fresh focus on this area has the potential to yield important savings for businesses seeking to reduce operational expenditure.

Maximizing savings will depend on three important principles: adopting an integrated approach, working with a clear understanding of current resource use, and innovating to develop practical solutions that are right for each business.

## Assess operations as one function, not in silos to maximize savings

Many organisations look at the efficiency and sustainability of each of operations independently. This approach delivers some savings for individual areas of operation: typically a 10% reduction in costs across all functions can be met by taking advantage of best practice tools and methodologies, including benchmarking ‘should cost’, supply chain optimisation, technology-supported usage measurement and analysis and so on. However, applying silo thinking to operational management rarely delivers the maximum savings possible.

A far more effective approach is to focus on the whole operation and identify the interdependencies between each function. With this broader view, it is possible to develop and implement solutions that deliver greater cost reductions. As an example, we have been working with a global pharmaceutical firm since 2008 performing worldwide energy and water assessments to help reduce their energy and water consumption and ultimately support corporate responsibility and sustainability strategies. Through the combined assessment of water treatment works and the energy consumption of a production facility, we have been able to not only reduce the cost of each operational element (water and energy), through reduction in unnecessary processes, but also identify areas where further efficiency in energy can be made. These are in areas such as, the improvement of water treatment infrastructure to reduce the amount of energy lost in the water treatment process. We helped the client to develop a clear overview of their most important suppliers and consumers and major energy and water flows, which saved them more than €10 million and supported their overall corporate responsibility and sustainability strategy.

Using this integrated approach, we have seen our clients achieve the following results:

- Increase energy efficiency by up to 35% across multiple production facilities
- Reduce maintenance costs by up to 30%
- Reduce water consumption (and wastewater discharge) by 10 - 40%
- Improve production downtime by up to 50%
- Remove supply chain costs of up to 15%
- Deliver a return on investment in one year of 200%.

## Know where and to what level resources are being used across the business

It is important to gather clear data to understand where energy and water consumption is highest and therefore where the potential for cost savings is greatest. Making assumptions can be misleading. For example, most (80–90%) of the costs associated with using water do not come from buying it. They come from paying for the energy to heat it, the chemicals used to treat it and the treatment of waste. Similarly, an assessment of energy usage and costs will show that, as might be expected, bulk manufacturing accounts for the greatest proportion of energy use with a pharmaceutical business (35%). However, less predictably, energy use in R&D is almost as significant (30%) (see figure 2).

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**Figure 2:** Energy use: pharmaceutical businesses

	Overall	Plug loads and processes	Lighting	Heating, ventilation and air conditioning (HVAC)
<b>Total</b>	<b>100%</b>	<b>25%</b>	<b>10%</b>	<b>65%</b>
<b>Bulk manufacturing</b>	35%	Sterilisation processes, incubators, dryers	Task and overhead lighting	Ventilation to clean rooms and fume hood, chilled water, hot water and steam
<b>Research and development</b>	30%	Microscopes, electric mixers, analysis equipment, incubators	Task and overhead lighting	Ventilation to clean rooms and fume hood, chilled water, hot water and steam
<b>Formulation, packaging and filing</b>	15%	mixers, motors	Mostly overhead, some task lighting	Particle control ventilation
<b>Offices</b>	10%	Office equipment	Task, overhead and outdoor lighting	Space heating (25%), Cooling (9%), ventilation (5%)
<b>Warehouses</b>	5%	Forklift, water heating	Mostly overhead lighting	Space heating (41%), refrigeration (4%)
<b>Miscellaneous</b>	5%	Overhead	Overhead	Overhead

**Source:** Berkeley National Laboratory, quoted in PharmaManufacturing



## Apply benchmarks and models intelligently, not as a 'one size fits all' solution

Benchmarking is a useful technique for highlighting areas with potential for improvement and setting appropriate target performance levels. Likewise, models are a good framework for organising data and understanding interdependencies. However, every business is different and benchmarks and models must be used intelligently. Applying a 'one size fits all' approach rarely delivers the best returns. What we find is that by drawing on extensive experience across the sector and interpreting these findings against benchmarks and modelling assessments clients can develop innovative and integrated solutions that deliver better operational efficiency and further cost savings.

As an example, we have been working with a global pharmaceutical firm to identify and implement state-of-the-art solutions to enable sustainable, efficient water use that minimizes the use and enhances the quality, both now and in the future, for over 50 facilities in the US, Europe and Asia. Our approach has enabled the firm to reduce operational costs and water treatment practices and supports their corporate responsibility strategy to minimize the use of water and energy. Not only is this client one of the most competitive leaders in the market place for producing high quality products and global health care, this approach also added over 15% more value to their business.

## The time is right

For many years, the pharmaceutical industry has tended to neglect the management of natural resources, preferring to focus on reducing labour costs and cutting production in the drive to reduce operational expenditure. However, as the cost of resources such as water and energy grows, and the issue of sustainability becomes increasingly prominent in the CSR agenda, pharmaceutical businesses must turn their attention to the cost and impact of indirect materials and the way they source and use them.

Improving the management of natural resources can not only help companies demonstrate their credentials as responsible corporate citizens. It can also deliver important savings on operational expenditure that feed directly into an enhanced bottom line.

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### Case study: Global US HQ Pharmaceutical Company

#### The client's challenge

Reduce operational costs to enhance performance and productivity and remain competitive in an increasingly challenging market.

#### The approach

We reduced maintenance costs by reviewing asset performance and administering controls to identify global capital maintenance spend, through innovative technology, asset knowledge and expertise and assessments of industry benchmark data.

#### The result

We produced a transparent estimate of costs, benchmarked against industry standards and aligned to business strategy. This identified opportunities to optimise maintenance and operation processes across the business delivering:

- An increase in labour efficiency
- A reduction in waste
- Supply chain consolidation to reduce costs by up to 20%.

## Contact us

To talk to us about optimising operational expenditure in your business and to find how Arcadis can help you, please contact:



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Providing efficiency enhancing solutions that deliver certainty in challenging global markets.

### About ARCADIS



22,000 employees



350 offices



€2.5 billion revenue



Dedicated global chemical and pharmaceutical sector team



We work with the top 20 pharmaceutical companies across the world