The Transformational Company Guide
Quality #11 - Resource Productivity

For more information on the new business leadership standard visit
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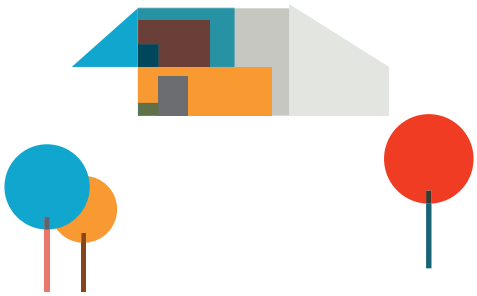
HOW
YOU DO IT

Transformational Company Quality

11 RESOURCE PRODUCTIVITY

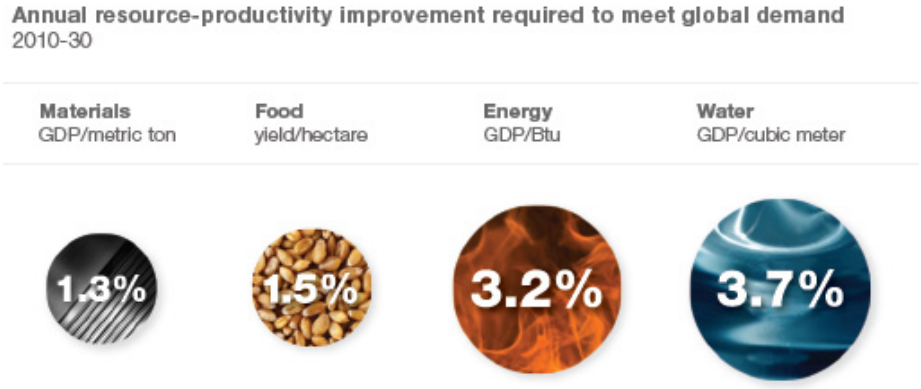


Transformational companies achieve a major improvement in the use of resources and materials and become a zero carbon company with respect to energy use.

WHAT IS IT?

The world has a finite set of materials and other natural resources. The ability for business and society to succeed and thrive rests largely on how – and how much – people extract and use the full range of materials that come from and return to the Earth such as wood, minerals, metals, fuels, chemicals, agricultural plants and animals, water, soil, and rock. We must understand and respect the Earth's limits in order to prosper within our means.

Global population is expected to grow by an additional two billion people to reach nine billion by 2050. Most of this population growth is experienced in rapidly urbanizing developing nations. As they industrialize resource demands will increase. The global middle class is expected to grow from two to five billion in fifteen years driving up consumption and materials, water and energy impacts. Research reveals that Canadians are using approximately 3.7 times their share of the Earth's annual productivity. Today humanity uses the equivalent of 1.5 planets to provide the resources we use and absorb our waste. This means it now takes the Earth 18 months to regenerate what we use in a year. Turning resources into waste faster than waste can be turned back into resources puts us in global ecological overshoot, depleting the very resources on which human life and biodiversity depend.



Source

To meet increased global demand requires a dramatic improvement in resource productivity – which some call a resource revolution or radical dematerialization. Whatever it's called, "sustainable materials management" is necessary to enable a viable planet, society and economy.

McKinsey calls for a resource revolution

Our recently completed research on the supply- and-demand outlook for energy, food, steel, and water suggests that without a step change in resource productivity and a technology-enhanced expansion of supply, the world could be entering an era of high and volatile resource prices. Nothing less than a resource revolution is needed.

Source

"Sustainable materials management" encourages reduction in the amount of material extracted, and selection of renewable materials over non-renewable resources. Materials management also encourages changes in product design to use less material, reduce toxicity, and make products more reusable or recyclable. In a system that recognizes the true value of materials, and accounts for all the environmental impacts associated with materials use, the concept of waste is significantly changed. Products and materials presently viewed as acceptable to throw away will increasingly be recognized as valuable. Materials that used to "go to waste" will be reused or become feedstocks for new products and processes. Biodegradable materials that are not reused will be returned to the Earth to renew natural systems. **(Source)**

Progressive companies understand that to be viable in the long term the ecosystems and resources they depend on must be maintained. They reinvent their companies around basic sustainability principles. This means decoupling growth and profitability from resource use, and finding new and innovative ways to deliver customer value while consuming a fraction of the hydrocarbon-based energy and materials used today. Rather than settle for modest, iterative, productivity improvements of a few percentage points a year, these companies rethink their business models to realize a step-change in resource productivity. They pursue low and no-carbon strategies, to avoid needing energy, while generating the energy they do need with as few greenhouse gas emissions as possible, offsetting the rest.

Zeronaut companies and leaders drive to zero impacts

Zeronaut, n.1. An inventor, innovator, entrepreneur, intrapreneur, investor, manager or educator who promotes wealth creation while driving adverse environmental, social and economic impacts toward zero. 2. Someone who finds, investigates and develops breakthrough, footprint-shrinking solutions for the growing tensions between demography, consumerist lifestyles and sustainability. 3. Political leader or policy-maker who helps to create the regulatory frameworks and incentives needed to drive related "1-Earth" solutions to scale.

Source

WHY IS IT IMPORTANT?

For businesses to be viable in the long term the ecosystems and resources they depend on must be maintained. Resource constraints represent a significant business risk. This is not only from the potential inability to source the necessary inputs for products but also from the threat of regulatory intervention such as taxes or moratoria on extractive industries and reputational risks from negative

media and NGO attention. The growing and urbanizing global population and rising consumer demand will result in higher and more volatile resource prices, supply shortages, changing customer preferences, government regulation and investor requirements. To succeed in this marketplace, companies will need to decouple growth from resource use. Innovating companies will find ways to do this better, smarter, faster and cheaper than their competitors, gaining competitive advantage. Businesses that achieve a major reduction in resource and material use, and realize carbon neutrality are more likely to achieve the license to grow from society.

These benefits are available for companies that dematerialize their business models:

- Maintain access to resources
- Secure stable supplies
- Enhance business continuity
- Reduce costs
- Get ahead of regulation
- Attract consumers
- Innovate products and value chains
- Increased availability of capital

Businesses that deliver dramatic resource productivity improvements at scale will benefit from greater resilience, reduced costs, improved security of supply and ultimately a more sustainable business model. Transformational companies who lead the way stand to gain significantly, while the benefits to society are immense.

Unilever plans to decouple business growth from environmental impact

"We live in a world where temperatures are rising, natural resources are being depleted and water is scarce. Food production needs to increase by 70% to meet global demand in 2050. Unilever recognises that in order to live within the natural resources of the planet we will have to decouple our growth from our environmental impact.

We have set a goal to halve the environmental footprint of the making and use of our products by 2020 as we grow our business. This is ambitious because it does not just cover the direct impacts of our factories, transport and offices. It accepts that Unilever has a responsibility across the value chain – from the sourcing of raw materials all the way through to the energy and water needed by people to cook, clean and wash with our products.

By looking at product development, sourcing and manufacturing through a sustainability lens, opportunities for innovation and cost reduction open up. And by sourcing sustainably we can reduce risk in our raw material supply chains."

Source

HOW TO DO IT?

The approach to dramatically reducing resource use and achieving carbon neutrality will vary from company to company, as will the strategic implications of resource-related trends.

One starting point is to understand how the changing resource landscape, and potential risks of short

or difficult- to-obtain supplies, will affect your company's future profitability and growth prospects. With this information, undertake R&D to find ways to pivot the business model to produce new opportunities for growth and disruptive innovation before less-prepared competitors do so. This could include investing in sustainable sourcing practices to postpone or avoid cost increases.

One route to identifying your resource risks and opportunities is to put a shadow price on your resource impacts and dependencies. An international effort, called the Natural Capital Protocol (NCP), is underway to develop a global standard to help companies measure, value and manage their direct and indirect interactions with natural capital. This will provide a common framework to measure natural capital impacts for use in strategic planning and supply chain management. The accounting protocol will support companies in their decision-making, including scenario planning, risk management, product and value chain innovation and preparing for future reporting and disclosure.

McKinsey advisors Stefan Heck and Matt Rogers **describe** these opportunities for leading the coming resource revolution:

1) Substitution - replace costly or scarce materials with less scarce, cheaper and higher-performing ones

Consider every resource your company uses in its core products and every resource your customers use or consume and then look for higher-performing and less expensive, less risky, or less scarce materials that might work as substitutes. Consider how substitution might deliver superior overall performance, much as electric motors are more efficient and provide better safety and acceleration than traditional internal-combustion ones.

Spotting substitution opportunities takes hard work. Apple and GE have gone through the periodic table element by element, assessing which ones pose the biggest risks for supply, costs, and regulation. These companies have developed substitution opportunities for each risky element. Looking a decade ahead gives your company a time advantage over competitors in responding to potential constraints.

2) Optimization - embed software in resource-intensive industries to dramatically improve how companies produce and use scarce resources

Another way your company can boost the productivity of existing resources is to optimize their use—for instance, by integrating software into traditional industrial equipment or providing heavy equipment as a service. Some methods of optimization are surprisingly straightforward, for example, UPS reduced fuel consumption and improved safety and speed by rerouting their trucks to avoid left turns.

To determine which opportunities have the most potential consider these questions: What expensive assets could be integrated with software and sensors? Which pieces of equipment are used only for a small portion of the time? What energy-intensive equipment is active without performing a function? This could be construction equipment, shipping containers that go back empty, or simply planes circling airports waiting for congestion to clear. All lend themselves to IT solutions that optimize routing, timing, loading, or sharing.

3) Virtualization - move processes out of the physical world

Virtualization means moving activities out of the physical world or simply not doing things, because they've been automated. There are many examples of virtualization such as digital music, online shopping, online news, etc. Consider how technology can help your company to dematerialize its products by providing virtualized services instead.

For more ideas on how to decouple growth from environmental impact consider the ideas in this **"Sustainable Materials Roadmap"**, produced by the US Environmental Protection Agency.

WHO IS DOING IT?

Proctor & Gamble (P&G), the largest consumer packaged goods company in the world, is implementing a 2020 sustainability plan aimed at conservation and renewable resources that have a more positive impact on the environment. Launched in 2010, two of the plan's three environmental areas include renewable resources and conservation of resources. **Check this link** to read about their targets, approach and results.

Sony, a multi-national Japanese electronics company, has adopted the Road to Zero, a global environmental plan setting the company's course to achieve a zero environmental footprint throughout the life cycle of their products and business activities by 2050. The Road to Zero pursues a series of medium term goals based on four environmental perspectives and six life cycle stages. The four environmental perspectives are curbing climate change, conserving resources, promoting biodiversity and controlling chemical substances. The six product life cycle stages include: research and development, product planning and design, procurement, operations, logistics, and take-back and recycling. This **link** will take you to further details.

For more examples, see the Zeronauts reference below.

WHERE CAN I GO FOR MORE INFORMATION?

- Sustainable Materials Management: The Road Ahead, US Environmental Protection Agency
  http://www.epa.gov/smm/pdf/vision2.pdf
- The Zeronauts: Breaking the Sustainability Barrier, John Elkington
  http://thezeronauts.com/
- Natural Capital Protocol Project
  http://www.naturalcapitalcoalition.org/natural-capital-protocol.html
- B Team Leaders Call for Net-Zero Greenhouse-Gas Emissions by 2050
  http://bteam.org/the-b-team/business-leaders-call-for-net-zero-greenhouse-gas-emissions-by-2050/
- Mobilizing for a Resource Revolution, McKinsey Quarterly, Richard Dobbs, Jeremy Oppenheim, and Fraser Thompson
  http://www.mckinsey.com/insights/energy_resources_materials/mobilizing_for_a_resource_revolution