

Resource Optimization

The traditional factors that gave competitive advantage to companies, such as access to resources, scale, and market share, are being joined by other, more human factors, such as creativity, intellectual capital, and access to top talent. As we enter the innovation economy, companies that can effectively leverage these intangible resources will be the most highly valued.

Yet the need for optimizing physical resources has never been greater. Resources like oil, gas, and water that were once assumed to be limitless are now under pressure, threatening production, healthy living, even survival. Accessing scarce and unevenly distributed resources has become one of civilization's most pressing issues.



The SAP Center for Business Insight discovers and develops new research-based thinking to address the challenges of business and technology executives.

Personal Empowerment

The Customer's Customer

Resource Optimization

Business Networks

We need to rethink how we produce and consume, taking a cradle-to-cradle approach to optimization across the entire product lifecycle, from the sourcing of raw materials to disposing or recycling, and reallocating resources in a real-time response to demand and supply fluctuations. We see a few examples of the benefits that will result from this redefined, real-time value chain:



- **Mitigation of risk in supply chains.**

Manufacturers will experience dramatic increases in raw materials volatility. Advanced analytics will help predict supply shortages, providing insight into when, where, and how to instantaneously reduce risk in supply chains.

- **Safeguarding of critical resources.**

Advancements in monitoring will provide real-time visibility into the integrity of pipelines and other remote structures, reducing the loss of valuable or dangerous resources.

- **Better living standards.**

Utilities and governments will partner to better manage critical resources, like water and electricity, using sensing and metering technologies to build real-time predictive models.

- **Utilization of excess capacity.**

Individuals and companies will engage in collaborative resource consumption, where privately owned but underused assets can be rented to others precisely when needed, yielding increased revenue for the owner, less expense for the renter (compared to owning the asset), and more efficient resource utilization overall.

- **Ease of recycling and reuse.**

Smart production processes will create products that will remember, and instantly transmit, information about their components, production methods, and usage, increasing the viability of resource recycling and reuse.

More and more, intangible human assets will drive innovation and, therefore, competitiveness. As the world transitions to an innovation economy, companies must learn to reorganize around these new value drivers.

Why We Wrote This Series

Throughout history, breakthrough innovations have pushed individuals and civilizations forward. Today's technologies – mobile, social, big data, and cloud – are the modern-day equivalents of Gutenberg's historic printing press, giving individuals new ways to express themselves and interact with their worlds. Whether as customers, employees, partners, citizens, or consumers, **individuals are once again at the center of massive change.**

Yet even the most basic changes can arrive unnoticed. If you'd asked a typical Venetian in the 1400s if he was feeling the Renaissance yet, you'd have been met with a blank stare. Change was everywhere, but its true importance wouldn't be understood for generations.

Fast-forward to today and we find ourselves living in a new renaissance: an era when the availability of vast amounts of real-time information promises a better-run world. In this new world, businesses will be able to drive higher economic output, and society, connected globally as never before, has the potential for significant improvement for all of its citizens, from the

wealthy to the impoverished. Just as the Renaissance propelled civilization out of the darkness of the Middle Ages and into the Enlightenment, today we have the possibility to be thrust into a new kind of enlightenment, one that balances the needs of a global citizenry and business community with the resources of a healthy planet.

In this series, we examine how new technology is reshaping the way businesses and governments engage with their customers and citizens, empower and inspire their employees, optimize their resources in real time, and harness the potential of social and business networks.

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