An investigation of green IT in 14 Danish companies identifies three strategies: **storefront** focuses on external presentation, **tuning** involves simple changes for improved efficiency, and **redesign** reinvents the company to leverage green IT’s potential.

Over the last few years, corporate management in general and CIOs in particular have increasingly received both internal and external pressure to consider green IT.\(^1\) External forces include customers demanding and rewarding companies that act in environmentally sustainable ways, in combination with governmental authorities seeking to regulate behavior to develop more sustainable businesses.\(^2\) Internally, employees and shareholders are demanding not only fiscal responsibility but also social and environmental responsibility from their companies.

These external and internal forces converge in green IT initiatives that often increase a company’s competitive advantage,\(^3\) even from a purely financial perspective. Such initiatives can lead to more efficient use of resources to create what customers perceive as superior offerings.\(^4\)

Given this growing pressure for green IT and its potential benefits, we wanted to learn more about how companies are actually approaching green IT initiatives. Last fall, we asked master’s students enrolled in our IT and Sustainability course at IT University of Copenhagen to investigate green IT in Denmark. The country has a national strategy for becoming a world leader in sustainable technology—part of its effort to strengthen local businesses—so it should be relatively advanced in its use of green IT.

We targeted the 50 largest companies in Denmark, but some declined to participate while others claimed they didn’t work with green IT. In the end, we collected 14 case studies of green IT, from which we identified three fundamentally different strategies: storefront, tuning, and redesign (see Table 1). These strategies capture how various organizations work with and perceive green IT.

**Storefront: Creating an Image**

IT has come to play a key role in the food industry,\(^5\) enabling the tracking and tracing of food products from farmer to end consumer.
One company in this industry at first seemed quite invested in green IT. The company's website discussed environmental considerations and the food industry's need to take responsibility for how its production processes impact the environment. The website also presented several green IT initiatives launched to obtain a sustainable business. We thus expected to find an interesting case of green IT and ideas for best practices. However, behind the façade was very little substance.

This storefront strategy seems to be driven by a need to comply with legal requirements to create some form of a green image. (Note that, in Denmark, companies are legally required to include a “green budget” in their annual reports.) As part of building a responsible image, green IT is promoted as an important area for the company. Without changing any of its business activities, the “storefront” company investigates existing activities to see if it can label any of them as green IT—such as recently buying new servers that are more energy efficient, or an investment in IT for tracking emissions at production facilities (even if the company was forced into the investment through legislation). So the storefront strategy doesn't actually involve any internal changes.

For the companies in our study that seemed to employ this strategy, green IT became primarily a concern for the external accounting department, the auditors, and the communications or marketing department. The companies were primarily engaged in business-to-business relationships, with no end consumers as customers. The strategy was indirectly justified by comments about fast-moving trends in business life. Some companies claimed that changing structures and activities every time the public gets hooked on a new trend would render internal chaos and a schizophrenic organization. Other companies claimed, with some justification, that they had been pursuing green IT initiatives for a long time.

Note that companies that employ the storefront strategy aren't necessarily inferior performers in comparison with companies that use the tuning or redesign strategies.

### Tuning: Improving Current Operations

One organization employing the tuning strategy is a large governmental agency. Its increased attention to green IT included consideration of improvements that might result from implementing it. After the Danish Energy Saving Trust reported that green IT could save companies $140 million euros annually,6 government agencies starting exploring green IT initiatives in an effort to save at least 10 percent on energy consumption by 2010.

The agency we studied aimed to improve efficiency in the area of communication. Top management thus launched five distinct green IT projects. The first one focused on changing and reducing the number of computer screens: 11,000 old CRT-based screens were replaced with 5,500 more efficient LCD-based screens. The second project addressed paperless communication and collaboration by digitizing more paper documents and using a SharePoint solution to make the documents available. The three remaining projects concerned fine-tuning current organizational processes to improve efficiency.

Tuning was the most common strategy employed. It’s convenient and leads to improvements without requiring drastic changes. A typical investment is server virtualization, which saves money and helps the environment.

### Redesign: Reinventing the Company

Nordea, a large Nordic financial institution, best illustrates the redesign strategy. Nordea’s approach to green IT originated from its Corporate

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**Table 1. Three strategies for green IT.**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storefront</td>
<td>Without changing any of its business activities, the company reviews existing activities to see if it can present them as green IT.</td>
<td>Presentation of green IT projects on the company website and through external communications.</td>
</tr>
<tr>
<td>Tuning</td>
<td>The company investigates existing activities to see if it can improve efficiency and resource consumption by using green IT.</td>
<td>Implementing server virtualization, switching off computers, and using energy efficient hardware.</td>
</tr>
<tr>
<td>Redesign</td>
<td>The company alters its internal structure, organizational chart, and business processes to fully leverage green IT’s potential.</td>
<td>Redesigning processes, identifying new business opportunities enabled by green IT, and changing corporate culture.</td>
</tr>
</tbody>
</table>
Social Responsibility (CSR) program, which—with support from top management—placed green IT under a more general initiative that aimed to reduce the company’s environmental footprint. Nordea then allocated resources and funds to lower its CO₂ emissions.

Implemented initiatives reduced waste and paper consumption, improved efficiency in buildings, and reduced staff travel. To support additional green IT initiatives, Nordea hired a green IT manager—Dennis Jönsson. As Jönsson explains, “There has never been a problem to find the business case for our Green IT initiatives. If there is any problem, it’s to change behavior and well established practice.” He therefore asks employees to actively participate by identifying green IT possibilities. In taking the redesign approach, Nordea altered its internal structure, organizational chart, and business processes to fully leverage green IT’s potential.

A company that has taken the redesign strategy even further is JustFair, which specializes in the traceability of fair-trade products. The company is based on an IT platform, the JustFair platform, which lets the company track coffee as it moves from farmers to end consumers. By scanning a barcode on the coffee package found at the local supermarket, consumers receive information about who grew and processed the coffee, how the farmer will spend the money earned, and information regarding the environmental impact. The company said in an interview that after implementation, the JustFair platform sales of the fair-trade coffee increased by 300 percent. The traceability wouldn’t have been possible without recent IT innovations. JustFair built its entire business model around the potential of green IT in redesigning business processes.

Redesigning an entire company to leverage green IT might be too risky for many large organizations, because it challenges some of the ongoing operations and day-to-day routines. However, establishing a subsidiary with this focus has many positive implications. First, it can significantly contribute to the branding. Second, many innovations related to a redesign through a green IT strategy can be transferred to the rest of the organization—and in some cases, throughout the industry. Consider the JustFair platform, which efficiently tracks food products. In international trade, customs authorities are moving away from the traditional, random inspection of goods crossing the borders to a more systematic process of certifying traders whom they allow to export goods. What the customs authorities are looking for in this certification process is, in many ways, precisely the same as what customers of fair-trade products are demanding—full control over pesticides, potential diseases, and other risk factors. Thus, an IT platform providing control and transparency will in the future be valuable to all international traders—not just those seeking fair-trade certification.

Few of the organizations in our study conformed to pure versions of these strategies. In most cases, the overall strategy was a mixture of the three approaches. To some degree, every organization was interested in showcasing its green IT initiatives and was also keen on labeling previous projects as green IT. Similarly, all organizations had individuals who, inspired by the media coverage of green IT, were scrutinizing their existing activities to see if using IT could improve them. Redesign, however, seemed to be more of an either-or strategy, because it required structural and fundamental changes to how the organization regarded its business. Furthermore, it involved employees in the initiation and implementation of green IT.

Nothing prohibits the pursuit of these three strategies in combination. Companies with both tuning and redesign strategies will strengthen their brand by showcasing their initiatives. A company with a redesign strategy will similarly benefit from scrutinizing its new business activities for potential efficiency improvements that green IT innovations can enable. Companies should actively seek to combine all three strategies to leverage of both the short- and long-term business opportunities they make possible.

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References


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