

An Oracle White Paper  
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# Greening the Extended High Technology Industry

## How Oracle Helps Achieve Environmental Sustainability

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## Overview and Introduction

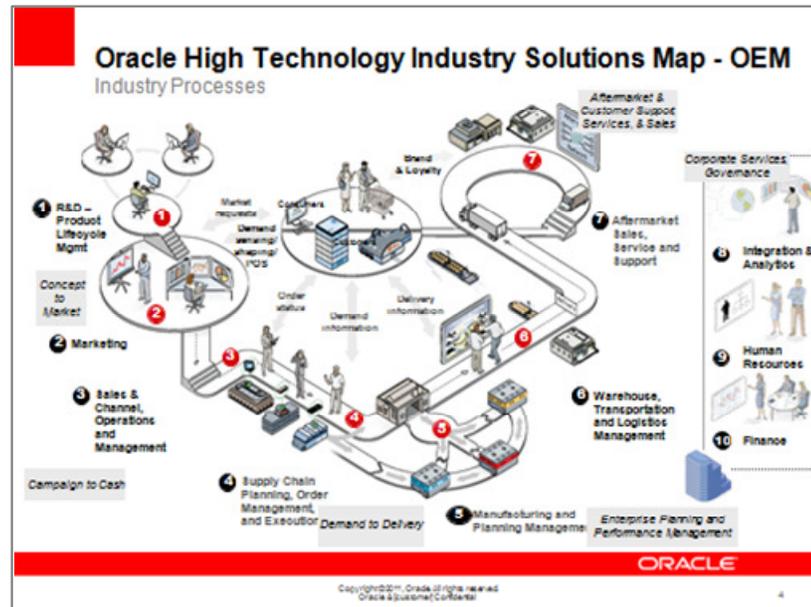
Expanding global consumption of consumer and other electronic equipment is a driving force behind the entire high technology industry. With some product lifecycles as short as three or four months, continued pricing pressures and promotion frequency, increasing globalization, product complexity and customer expectations; transparency and efficiency are required for businesses to grow profitably. To succeed, high technology enterprises must perform near flawlessly -- whether knowing where to invest for your next product or service innovation, achieving maximum growth using your extended sales channels, or collaborating with strategic design, supply, manufacturing, or logistics partners up and down the supply chain.

Today, however, our moral guidance tells us it is not enough to simply succeed simply by growing profits- instead we must succeed use processes and tools that also lead to both profitability and environmental sustainability. Across all high technology enterprises, whether as part of a complex equipment or consumer brand owner OEM, semiconductor, distributor, contract manufacturer/EMS or ODM company, there are many ways that Oracle products and solutions can help achieve greener and more environmental friendly outcomes in day to day responsibilities.

"Today, our moral guidance tells us it is not enough to simply succeed simply by growing profits; instead we must succeed using processes and tools that lead to both profitability and environmental sustainability."

– Guy Schlacter, Oracle Director of High Technology Industry Marketing and Strategy

Using an OEM Oracle Industry Map as an example, let's take a look at some of the environmental impact Oracle products and solutions can effectively improve.



## Engineering Research & Development

Within the Engineering R&D roles, both engineering and management can have an impact on sustainability within their innovation processes. Choices of supplier, materials and parts can result in measured differences. Examples include:

- Suppliers can be better chosen to ensure environmentally friendly and regulatory compliance, in addition to proximity to manufacturing or assembly and test can impact transportation charges.
- Supplier scorecards can help track on time delivery to avoid wasteful expediting using high carbon footprint transportation.
- Efficient collaboration with design partners will help sustainability by reducing errors that are not only expensive, but can also lead to scrap and waste, while reducing in-person travel.
- A comprehensive quality management program similarly will not only help reduce costs, but will also help reduce scrap during manufacturing and minimize product returns.
- Product features can be improved for environmental friendliness, especially if they are designed to consume less or greener materials, or if power savings intelligence & features are incorporated into the design for management or user alerts and interfaces.

*Oracle products helping green:* Agile Product Collaboration and Agile Engineering Collaboration, Agile Product Governance and Compliance, and Agile Product Quality Management; Oracle Product Hub, Autovue Enterprise Visualization Solutions, Oracle Supplier Lifecycle Management, MySQL Embedded Database, Java DB

"No single new IT application is needed to support sustainability, rather a strong discipline in adapting, integrating and using existing IT applications. (e.g. PLM, MES, SCM, BI, Network Design)"

— Source: Pierfrancesco Manenti, Research Director, IDC Manufacturing Insights, EMEA 2011 Manufacturing Top 10 Predictions, February 2011

## Sales & Marketing

Sales and marketing are at the heart of growth in an enterprise, and rely on various resources, team members and customer interactions. Meeting travel, printed collateral, printed promotions, product samples, and campaigns are all part of the job. Sometime without realizing, each can impact your enterprise's carbon footprint. Examples include:

- Sales team members can utilize solutions to improve communications and reduce travel using collaboration and visualization tools.
- Sales team can reduce their paper usage by using secure electronic document libraries and sharing.
- Quoting and capturing orders are routine, yet automating and maximizing electronic communications minimizes needless paper use during processing.
- Marketing can leverage and increase electronic tools like social media, web content, casts, and ecommerce sites to reduce their environmental footprint.
- Improving forecasts and use of product bundles aligned to promotions can help minimize shipments. Supply chain planning and execution are improved, minimizing the use of higher carbon footprint transportation modes, and also decreases excess inventories that take space and energy to warehouse and subsequently transport when needed.

*Oracle products helping green: Siebel Sales, Siebel Marketing, Siebel Call Center, Siebel Order Management; Oracle CRM On Demand; Oracle Customer Hub B2B & B2C, Demantra Predictive Trade Planning, Antovue Enterprise Visualization Solutions, Oracle Beehive, Oracle Product Information Management Data Hub, Oracle Real-Time Decisions for Siebel E-Commerce*

## Supply Chain Management

Supply chain management across all activities, can have dramatic effect on the enterprise's eco-impact. Examples include:

- Procurement wields supplier decisions that can greatly impact the eco-system. When choosing to spend dollars with a supplier, understanding and monitoring their corporate compliance to eco-standards, eco-practice and regulations can in turn greatly affect both directly and indirectly your environmental impact.
- Consumption patterns within the company can be identified and provide alternative choices that can save cost, as well as create eco-savings from identifying wasteful processes, or choosing alternative suppliers to reduce transportation distances and costs.

- Operations and supply chain planning need to continuously work toward right-sized inventories, meeting SLAs, and providing customer demand responsiveness. Of course this entails a complex process, but the eco-impact is tremendous, as is the potential working capital for inventory and other cost savings that can be achieved.
- Proper planning can reduce inventory, wasteful inbound and outbound transportation modes, and distribution and warehouse operating complexity and energy consumption.

*Oracle products helping green: Demantra Real-Time Sales and Operations Planning, Oracle Advanced Supply Chain Planning, Oracle Rapid Planning, Demantra Demand Management, Demantra Predictive Trade Planning, Oracle Advanced Procurement, Oracle Supplier Lifecycle Management, Oracle Supplier Hub, Oracle Business Intelligence Standard Edition, Oracle Fusion Middleware, and Oracle Database*

"Achieving a greener supply chain helps meet customer fulfillment needs even when it doesn't bring significant business performance improvements."

— Source: Pierfrancesco Manenti, Research Director, IDC Manufacturing Insights, EMEA 2011 Manufacturing Top 10 Predictions, February 2011

## Manufacturing

Manufacturing, whether outsourced, in-house or a hybrid model, has the ability to significantly improve efficiency and reduce carbon consumption. Examples include:

- By working from a consensus operations plan across the enterprise, manufacturing operations are able to improve production planning, scheduling and overall efficiency.
- Shop floor management data provides additional visibility to planning and scheduling to further help efficiency.
- Through improved production efficiency, manufacturing operations can improve carbon consumption by reducing operational hours and avoiding extra shifts leading to saving power consumption as well as transportation costs of extra shift employees.
- A greater return on assets can save power in addition to capital costs if production floor equipment needs can be reduced through better efficiency planning for current equipment and assets.
- By integrating shop floor data with service and improving quality -- engineering and other product data can lead to reduced production waste, energy usage, and product returns.

*Oracle products helping green: Demantra Real-Time Sales and Operations Planning, Oracle Manufacturing Scheduling, Oracle Manufacturing Operations Center, Oracle Shop Floor Management, Oracle Inventory Management, Agile Product Quality Management, Agile Product Collaboration and Agile Engineering Collaboration, AutoVue Enterprise Visualization Solutions, Oracle Business Intelligence Standard Edition, Oracle Service Oriented Architecture, Service Oriented Architecture (SOA), Oracle Fusion Middleware, Oracle Database*

## Logistics and Transportation

While logistics and transportation have an obvious impact on carbon consumption from transportation, there are many ways the impact can be reduced. These include:

- Logistics and transportation can minimize material shipments and even total product transportation. This can be done by monitoring, collaborating and improving product package/size/volume, implement pallet optimization as well as route, mode and shared load optimization working with logistics providers to minimize energy for travel and distance.
- In addition to the tools to conduct these processes, improvements will also come from better enterprise operational planning, which can help minimize reactive and expedited carbon-waste often created from poor planning or visibility.

*Oracle products helping green:* Oracle Value Chain Execution (Logistics), Oracle Transportation Management, Oracle Strategic Network Optimization, Oracle Warehouse Management, Oracle Global Trade Management, Oracle Fusion Middleware, Oracle SOA Suite, Oracle Application Integration Architecture, Oracle Database

## Aftermarket Services and Support

Aftermarket services and support roles are critical to shaping customer satisfaction and loyalty. Providing a continuous favorable customer experience is key to achieving this and doing so in an eco-friendly manner can only help. Examples include:

- Efficient service and support that can accomplish first contact issue resolution can often stave off customer dissatisfaction while also saving needless incurred service, repair, warranty or transportation expenses and respective carbon and waste costs.
- Improving call centers and depot repair centers accessibility to related product and customer data.
- Along with this data, reps can be assisted by knowledge management, visualization and even guided selling intelligence systems that combine to improve the customer experience. Whether knowing how to describe visually where you want them to look, knowing what version hardware requires which version software during support or even during aftermarket sales, the customer is receiving improved service. High Tech enterprises greatly reduce their environmental impact through improved services.
- Additional impact savings also come from improved services by reducing needless product returns and repairs, or need for field service. Also, simply improving field service by ensuring the customer is expecting the service via confirmations, and coordination of scheduling with service part availability with the service technician, there is a green affect by reducing transportation, shipping, packaging, refurbishing materials, and reclamation processes, all in addition to reduced cost to serve.

*Oracle products helping green:* Siebel Service, Siebel Field Service, Siebel Order Management, Siebel Call Centers; Oracle CRM OD, Oracle Real-Time Scheduler, Oracle Service Parts Planning, Autovue Enterprise Visualization

*Solutions, Oracle Beehive, Agile Product Quality Management, Oracle Product Information Management Data Hub, Oracle Customer Hub B2B or B2C; Oracle Real-Time Decisions for Siebel E-Commerce), Oracle Database*

## Financial Management

Finance organizations shoulder fiscal and compliance responsibilities and rely on systems, visibility, and data analytics to enable intelligent decisions to properly manage the enterprise. There are many ways that a finance organization can save green while going green. Examples include:

- Expense savings stemming from improved strategic and workforce planning, as well as risk reduction from environmental and trade compliance management all hold the potential to save the environmental impact of the organization.
- Optimizing employee utilization increasing productivity can curtail commuting carbon emissions in addition to other energy savings.
- Analysis leading to reducing wasteful consumption spending, can also lead to environmental reductions from material and waste savings.
- While formal risk analysis can save tremendous potential costs incurred from compliance, product, legal, financial or product success risks, there can be additional carbon savings discovered stemming from the various scenario analyses.

*Oracle products helping green: Oracle Financial Management, Hyperion Performance Management Applications, Oracle Global Trade Management, Oracle Crystal Ball, Agile Product Governance and Compliance, Oracle Master Data Management, Oracle Fusion Middleware, and Oracle Database*

## Human Resources (HR) & Support Services

HR organizations help drive important enterprise-wide processes that impact efficiency and costs that can also lead to environmental impact savings. While addressing employee recruiting, retention, training, policy and privilege management, implementing self-service e-based programs can reduce costs while also saving needless face to face time, transportation or paper waste.

*Oracle products helping green: Oracle Fusion Human Capital Management, Oracle Identity Management, Oracle Self-Service Human Resources, Oracle Training Administration, Oracle Fusion Middleware, Oracle Database*

## IT Department

Information systems and technology organizations are working more closely today with their business counterparts than ever before. Not only does working together improve enterprise results, but it also provides the organization improved visibility and better ability to anticipate IT solutions and create the proper IT roadmaps that will support accomplishing the business goals. This enhanced visibility can improve technology planning, architecture, and utilization leading to further cost and eco-impact savings. Cost and eco-savings can be achieved through hardware, business process and software

solution optimization that leads to reduced data center and data-communication power consumption energy savings from both equipment, and heating and cooling costs. Whether data center hardware footprint reduction is from integration architecture, higher performance and efficient equipment, application virtualization, instance reduction, or smart sensor technology management, significant expense and environmental savings can be achieved.

*Oracle products helping green: Oracle Fusion Middleware, Oracle SOA Suite, Oracle Application Integration Architecture (AIA), Oracle Database, Sun SPARC Enterprise Servers, Oracle Exadata, Oracle Exalogic, and Data Center Solutions using Oracle Grid Computing*

## Conclusion

We all shoulder a responsibility to ourselves and future generations to be considerate and conscientious of our environment, and the impact we make. While always a challenge, there are many ways Oracle can help you improve your eco-impact as you take on your daily tasks in your High Technology Company. To learn more, see below for our online high technology industry solution information or contact Oracle.

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## Related On-Line Oracle High Technology Industry Solution Information:

- **Product Innovation Decisions & Execution Management** - <http://www.oracle.com/us/industries/industry-solutions/046979.html>
- **Sales & Marketing Solutions** - <http://www.oracle.com/us/solutions/crm/index.html>
- **Sales and Operations Planning for Supply Chain Management** - <http://www.oracle.com/us/industries/industry-solutions/046981.html>
- **Discrete Manufacturing Solutions** - <http://www.oracle.com/us/products/applications/ebusiness/scm/051305.html>
- **Value Chain Execution Logistics and Transportation Management** - <http://www.oracle.com/us/products/applications/ebusiness/logistics/index.html>
- **Service Transformation** - <http://www.oracle.com/us/industries/industry-solutions/046982.html>
- **Financial Governance, Risk, and Compliance** - <http://www.oracle.com/grc/>
- **Integrated Workplace Management** - <http://www.oracle.com/us/industries/industry-solutions/046975.html>
- **Next Generation Green Data Center** - <http://www.oracle.com/us/technologies/next-generation-data-center/index.html>

## Table: Additional Oracle Product Information Helping Green High Technology Enterprises

<b>ROLE / LINE OF BUSINESS</b>	<b>ORACLE PRODUCTS HELPING YOU DO YOUR JOB IN AN GREEN WAY</b>
Engineering R&D	Agile Product Collaboration and Agile Engineering Collaboration, Agile Product Governance and Compliance, and Agile Product Quality Management; Oracle Product Hub, Autovue Enterprise Visualization Solutions, Oracle Supplier Lifecycle Management, MySQL Embedded Database, Java DB
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Supply Chain Management	Demantra Real-Time Sales and Operations Planning, Oracle Advanced Supply Chain Planning, Oracle Rapid Planning, Demantra Demand Management, Demantra Predictive Trade Planning, Oracle Advanced Procurement, Oracle Supplier Lifecycle Management, Oracle Supplier Hub, Oracle Business Intelligence Standard Edition, Oracle Fusion Middleware, and Oracle Database
Manufacturing	Demantra Real-Time Sales and Operations Planning, Oracle Manufacturing Scheduling, Oracle Manufacturing Operations Center, Oracle Shop Floor Management, Oracle Inventory Management, Agile Product Quality Management, Agile Product Collaboration and Agile Engineering Collaboration, Autovue Enterprise Visualization Solutions, Oracle Business Intelligence Standard Edition, Oracle SOA Suite, Oracle Fusion Middleware, Oracle Database
Logistics and Transportation	Oracle Value Chain Execution (Logistics), Oracle Transportation Management, Oracle Strategic Network Optimization, Oracle Warehouse Management, Oracle Global Trade Management, Oracle Fusion Middleware, Oracle SOA Suite, Oracle Application Integration Architecture, Oracle Database
Aftermarket Services and Support	Siebel Service, Siebel Field Service, Siebel Order Management, Siebel Call Centers; Oracle CRM OD, Oracle Real-Time Scheduler, Oracle Service Parts Planning, Autovue Enterprise Visualization Solutions, Oracle Beehive, Agile Product Quality Management, Oracle Product Information Management Data Hub, Oracle Customer Hub B2B or B2C; Oracle Real-Time Decisions for Siebel E-Commerce), Oracle Database
Financial Management	Oracle Financial Management, Hyperion Enterprise Performance Management, Oracle Global Trade Management, Oracle Crystal Ball, Agile Product Governance and Compliance, Oracle Master Data Management, Oracle Fusion Middleware, and Oracle Database
HR & Support Services	Oracle Fusion Human Capital Management, Oracle Identity Management, Oracle Self-Service Human Resources, Oracle Training Administration, Oracle Fusion Middleware, Oracle Database
Information Technology Services	Oracle Fusion Middleware, Oracle Application Integration Architecture (AIA), Oracle Database, Sun SPARC Enterprise Servers, Oracle Exadata, Oracle Exalogic, and Data Center Solutions using Oracle Grid Computing

For more information also visit: [www.oracle.com/goto/hightech](http://www.oracle.com/goto/hightech)



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