

Developing a massive infrastructure requires a country to envision and predict the supply chain requirements of the future. Oman is doing just this.

For the last several years, Oman has been building massive new water, air, and dry ports across the country in order to facilitate its domestic growth and to serve a large potential market for transshipment and regional trade. Its massive effort includes notably development projects at the Port of Salalah, Port of Sohar, the Muscat airport, the Duqm free trade and industrial area, and the Adam airport.

Who are the customers around which the supply chain should be designed? Aside from Oman's domestic oil concern, they consist of large industrial companies such as Alcoa and BASF. For a profile of their supply chain requirements, think of Futuris Automotive, a winner of BSI's 2008 supply chain awards. It had 99% perfect order fulfillment, 0.08% obsolete inventory, 0.05% backorders due to flexible manufacturing, 99.5% ATP and available to request, and 99.5% picking accuracy.

Keeping these customers in mind, Oman needs to build infrastructure that can support the requirements of their rationalized and synchronized supply chains. To support their rationalization objectives, it needs to:

- Establish hub ports that have a low per-unit handling cost so shippers can compete on a lowest landed cost basis
- Attract carriers that serve Asia directly to help shippers lower their purchased materials cost
- Widely deploy broadband internet access to allow shippers to use EDI and have paperless work flows
- Support RFID and open warehouse technology so they can succeed at their consignment and vendor-managed inventory programs

To support their synchronization objectives, it needs to:

- Co-locate warehouses with light assembly and testing facilities, on-dock if possible, and implement intelligent transportation systems, to allow shippers to deploy just-in-time supply chains
- Offer multiple storage and cross-dock sites so shippers can place their inventory in the most economical location
- Deploy a common information

# Oman's World-Class Supply Chain Megaproject

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system across all ports and airports that connect so large shippers can implement effective Sales & Operations Planning (S&OP) systems

- Build and operate multi-tenant public warehouses that allow shippers to manage inventory collaboratively with their supply chain partners
- Recruit long-term anchor tenants so smaller tenants are assured of the long-term stability of their supply chain infrastructure
- Provide scanning and similar security systems that permit shippers to mitigate the risks of disruption and terrorism

After providing the infrastructure to support synchronized supply chains, Oman needs to extend it to cover a broader range of requirements of shippers that need to customize. For example, take Henkel, which won BSI's 2009 supply chain award for customized supply chain management. Henkel separately segments and targets more than 90% of its customers, and delivers more than 95% of orders by the time the customer requests. It also has less than a one day response time to customer inquiries.

In order to achieve this degree of supply chain customization, it needs flexibility to handle separate streams of product corresponding to customer segments with unique delivery, labeling, and cost require-

ments. This necessitates advanced physical port and warehouse layout, sophisticated automatic guided vehicle (AGVs) systems, and a variety of loading docks, vehicles and conveying systems that can handle everything from palletized freight to small packages and breakbulk. The country also needs to provide management information and reporting systems from customs so shippers like Henkel can know the profit margin for more than 90% of their customers. The logistics complexes need to offer the contractual flexibility to scale volume up and down so Henkel can offer its customers 20% volume flexibility within a short two-week lead time.

The investment and benefits in such world-class infrastructure are well worth the effort. Boston Strategies International (BSI) worked for an oil company to achieve lower lead times and eliminate backlogs at suppliers, and the projects' potential gross benefits range in the billions of dollars.

Oh man, Oman will be great when it is done! **D**

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