



Logistics & The Electronic Supply Chain

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HP today



- Fortune 10 company, with \$87 billion annual run rate
- \$7 billion in organic growth in FY04
- #1 or #2 in virtually every market, customer segment and region
- >21,000 patents, 650 products introduced last year
- Growing profits in every business with better balance
- \$15 billion in cash, generating \$6 billion in cash from operations annually



HP Today

Personal Systems Group PSG



\$50.3 B

Imaging & Printing Group IPG



Technology Solutions Group TSG



\$31.6 B

Access Devices Business (\$25.7 B)

- #2 in total PCs (Q1CY05)
 - #1 Consumer DTs
 - #2 Commercial DTs
- #2 in total notebook PCs
 - #1 Consumer NBs
 - #3 Commercial NBs
- #2 in Handheld devices
- #2 in Workstations

Imaging and Printing Franchise (\$24.6 B)

- #1 Inkjet printers
- #1 LaserJet printers
- #1 scanners
- #1 wide-format printers
- #1 all-in-one devices
- #1 print servers
- #1 photo media

Servers, Storage, Software (\$16.7 B)

- #1 total server units (Q1CY05)
- #1 x86 & Itanium 2 servers
- #1 fault-tolerant servers
- #1 Windows®-based servers
- #1 Linux®-based servers
- #1 UNIX®-based servers
- #1 total external storage
- #1 Storage Area Networks
- #1 Disk Storage Systems
- #2 External Raid Storage
- #1 mgmt. software
- #1 hi-perf tech computing

Consulting, Support, Outsourcing (\$14.9B)

- #1 mission-critical infrastructure
- #1 open IT environments
- #1 enterprise-ready Microsoft integration & support
- #3 IT services
- #1 industry's largest channel partner network

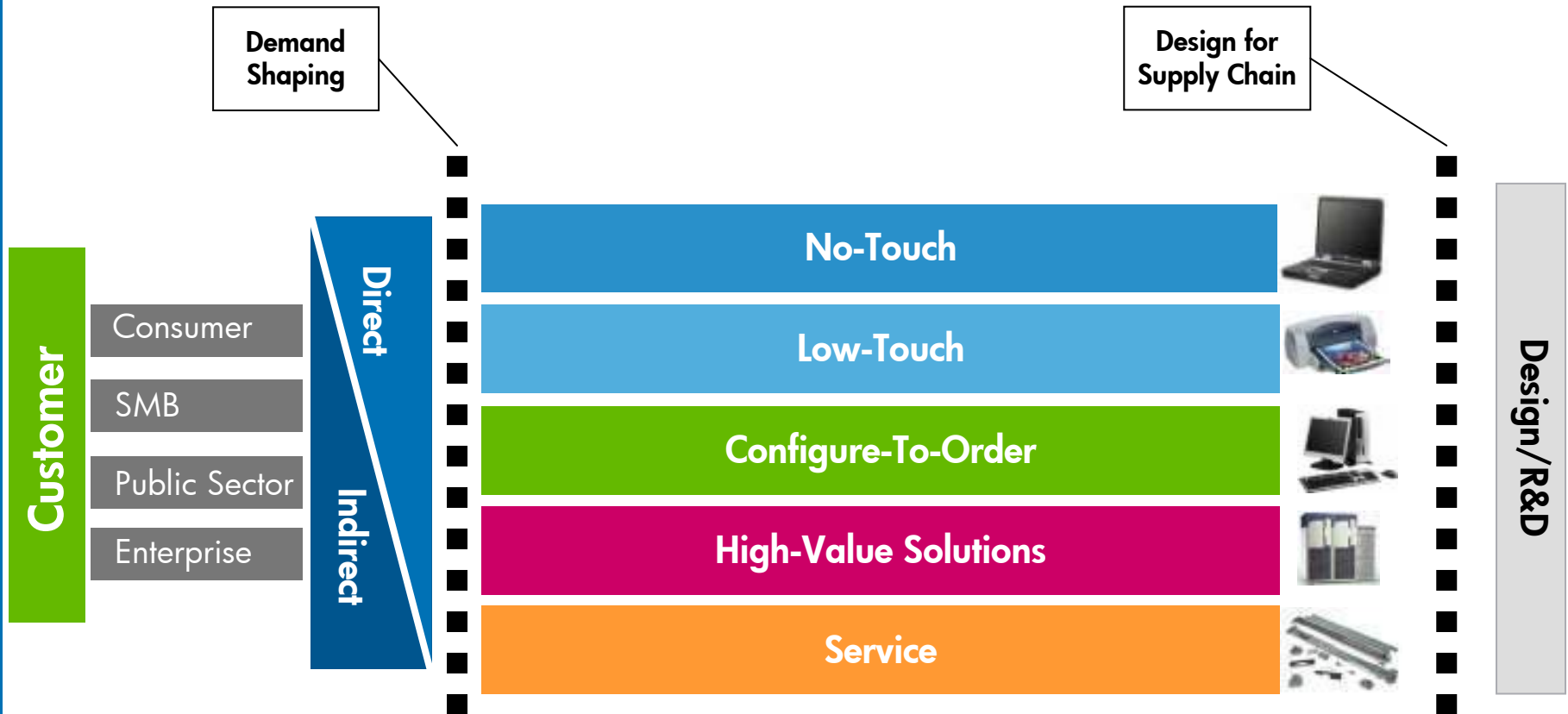
Other revenues:

•HPFS: \$2.08 B (CSG), Corp. Invest.: \$.59 B, Eliminations: (-\$1.47 B)

Issues facing the Global Supply Chain

- Continuous demand for greater customer choice & higher value
- Accelerated technology lifecycle
- Increased leverage and consolidation
- Pervasive globalization
- Heightened security & legislation requirements
- Risk mitigation
- Social and environmental responsibility

Supply Chain Strategy Overview



Supply Chain Capabilities Overview



Procurement

Manages process of optimizing overall product material costs, assurance of supply & quality compliance

Manufacturing

Leverages extended enterprise partners and HP internal resources to deliver high value products

Logistics

Fulfills customer delivery expectations; transit time, availability, visibility & predictability

Planning

Manages process of ensuring product availability aligns with customer demand

Order Fulfillment

Co-ordinates process of fulfilling orders in readiness for delivery to customer

Supply Chain IT

Provides supporting infrastructure; connectivity, data integrity, security & collaboration

Manufacturing

Major locations of HP product materials, components and services suppliers



HP's suppliers of product materials, components and services

Americas	Europe & Middle East	Asia Pacific & Japan	
<p>Canada, Puerto Rico, United States—software, semiconductors, hard drives, cabling & power supplies, packaging materials Brazil, Costa Rica, Mexico—microprocessors, contract manufacturing</p>	<p>Eastern Europe: Czech Republic, Hungary, Romania—contract design and manufacturing W. Europe: Austria, France, Germany, Italy, Holland, Scotland, Switzerland & UK—semiconductors, media, packaging materials</p>	<p>China—semiconductors, monitors, power supplies Japan—hard drives, media, optical disk drives, semiconductors, lenses Malaysia—semiconductors, hard drives</p>	<p>Korea—notebook displays, semiconductors, optical disk drives, hard drives Singapore—hard drives, microprocessors India, Indonesia, Philippines, Thailand—microprocessors, packaging materials Taiwan—semiconductors, cabling & connectors, monitors, notebook displays, power supplies</p>

Easy rules of thumb

- Produced closest to dense customer concentrations
 - Highly customized product with short lead time expectations
- Produced in a low labor cost spot in region
 - Bulky products where logistics costs outweigh labor cost differentials
- Produced in tax havens
 - High contribution margin products usually required asset-intensive manufacturing
- Produced in lowest global labor cost location
 - Products with lower logistics profile where labor is a significant component of the product
 - Products for companies who don't do landed cost analyses
 - Very inexpensive product with fixed demand planning cycles

Issues facing Logistics at HP

- Declining average sales price per unit drives up logistics as a percentage of revenue
- Oil price variations
- Global transportation infrastructure constrained
- Demand growing fastest in emerging markets
- Heightened security & legislative requirements
- Logistics provider market consolidating

Market growth issues impacting logistics

- Logistics into truly developing countries is tremendously difficult
 - Micro-distribution by local parties
 - Cost of delivered product much higher to the end user
 - Theft, graft and customs delays
- China, India markets don't have seamless interstate commerce
 - What can U.S., EU history teach us here?

Market growth issues impacting logistics

- Consumers want products delivered to their homes
 - Loss of economies of scale
 - \$1/mile vs. \$10 for the last mile
 - Each country has a different delivery infrastructure/direct market
- Consumers are growing in areas where the logistics markets are inefficient
 - Eastern Europe
 - Middle East, Southern Africa

Pop quiz

- What is the most expensive non-material cost segment of a laptop supply chain?



Board Production



Product Assembly



Logistics



A few conclusions

- Product planning and manufacturing in low cost countries are no longer the lynchpins of the supply chain
- Logistics becomes the bottleneck for low cost and high spoilage product
 - Well known in the grocery industry
 - Toys, garment best practices synchronize production with logistics, customer order patterns
 - High tech is next
- Theory of efficient markets applies to logistics
 - Shanghai landing rights
 - Iraq war

Next steps in the markets

What should happen...

- Western Europe/EU trucking market evolves
- Pan-China transportation players emerge
 - Likely looks more like European market 1960 - 1995
- Mexico ports will displace Long Beach
 - *IF* rail links are solved
- Fuel costs force more landed cost analyses, flip some production paradigms
- Capacity constraints
 - Production planning and logistics planning merge into a common discipline
 - More sophisticated transportation procurement



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