The New Reality:
Building a Customer-Driven Innovation Engine



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Supply Chain Networks

Lucent Technologies
Bell Labs Innovations



SCN Awesome Execution Engine
Key Supply Chain Results / Transformational Changes

	Where we Were Early SCN	Where we Were Sept 2002	Where we Are
Inventory	$8 Billion (1.3 turns)	$1.4 Billion (5.6 turns)	$632M (7.5 turns) Q4 2003
Gross Margin	12% Q1 2002	-15%	43% Q4 2003
Factories	29 Factories (+10M Sq Ft)	5 Systems Integration Centers (<1M Sq Ft)	5 Systems Integration Centers (<1M Sq Ft)
Manufacturing Budget	$1.9B	$ 435M	~$150M
Circuit Pack Manufacture	90% in High Cost Regions	70% in Low Cost regions	85% in Low Cost Regions
Unionized Workforce	~19,000	~2,100	~600
Lucent Repair Centers	16	4	4
Managed Warehouses	500+	101	0 (50+ Logistics Providers)
Supply Base	40% spend with 1000+ suppliers (3000+ suppliers total)	80% spend with 60 key suppliers	80% spend with 60 key suppliers
Product Platforms	Limited product specific proprietary platforms	Supply base strategies in place to leverage component and subsystem spend	Aligning new product development to three industry wide platform architectures - Enclosures (47 to 7) - Shelves (100's to 3) - Circuit Packs (1000's to 100's) - Tunable Filters (400 to 5)
Delivery Systems Orders	80% in 2001	94%	96% Q4 2003
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Customer Loyalty Index	6.78 Q1 2002	6.92	7.38 Q4 2003 (Best in Class 7.43)

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Lucent's Proud Legacy



Western Electric Hawthorne Plant 1922

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Bell Labs: 75 Years of Innovation



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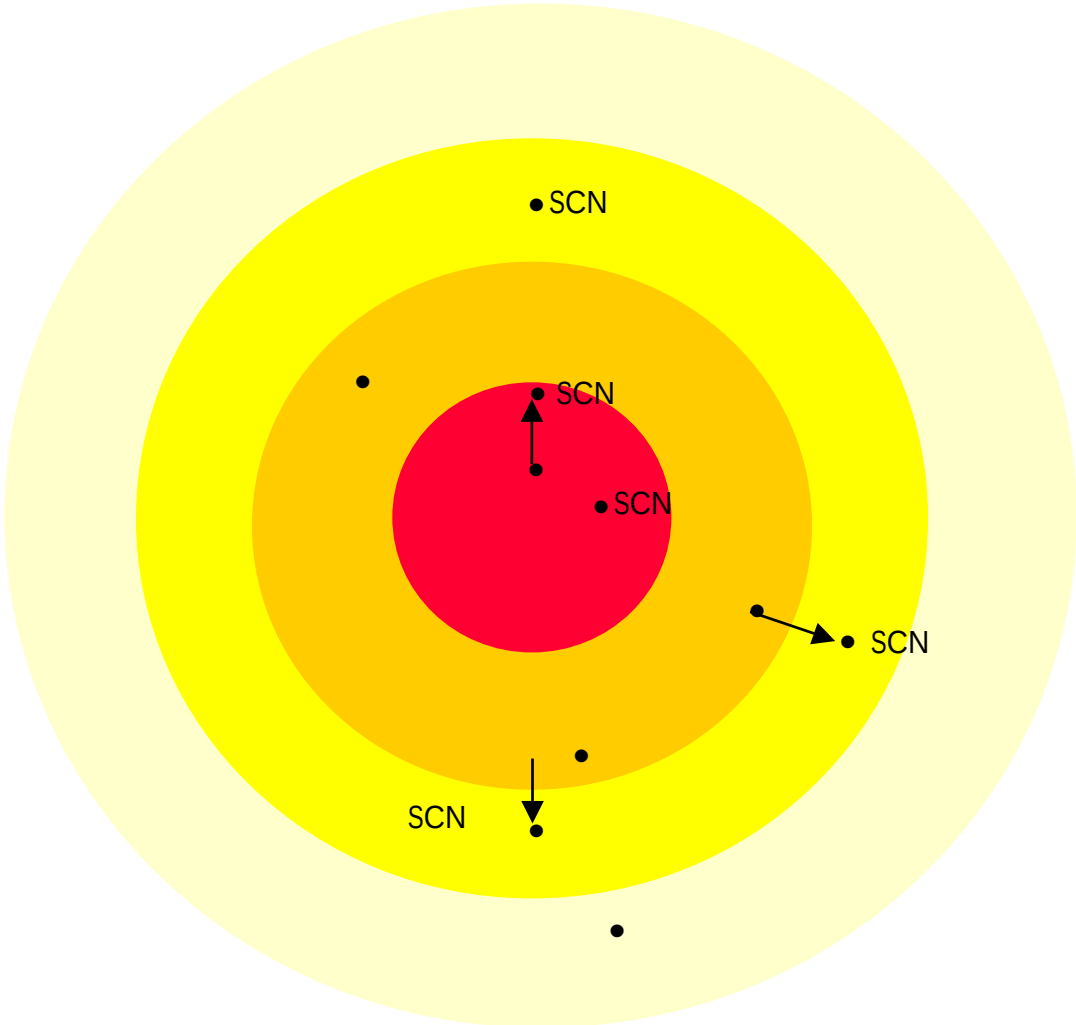
Day One Challenges of a New Organization - Jan 2001



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Supply Chain Challenges

Lucent in early 2001

- Vertical organizational structure (silo mentality)
- Legacy infrastructure not sufficiently flexible or cost effective
- Supply chain product development/cost could be better leveraged across platforms, suppliers, sourcing, *etc*
- Supply chain IT systems needed to be more integrated and efficient
- Opportunity to improve visibility and understanding of margin and profitability contribution across the enterprise
- Customer and supply chain connection not optimally established

Adjust the Supply Chain Architecture and Organizational Model to operate as a virtual fulfillment network – Supply Chain Networks

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...in a New Competitive Reality

- Globally competitive – regional dominance not sustainable
- Extremely fast – internet enabled
- Size/legacy can be disadvantage
- Cost considerations are vitally important
- Horizontal and matrix structures/collaboration
- Unprecedented access to information
- Flexibility and adaptability in a dynamic market environment - without adding cost to the solution

Supply Chain Management expertise driving the lowest Cost, highest Quality and fastest Time to Market has become just as critical to the Customer as product technology and services differentiation

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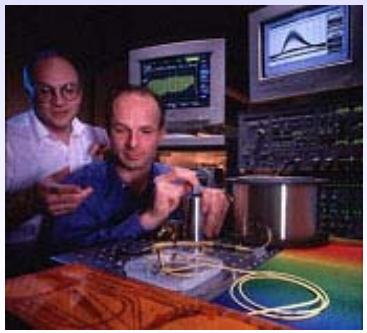
Zero Latency Customer/Growth Focused Value Chain

Lucent & the Art of the Solution







We have a deep understanding of how networks operate and what it takes to leverage and evolve customers' existing network investments to drive new revenues, while reducing complexity and cost

Components of New Customer Solution

(from green-field to live network in 6 months)

- ***60 Mobile Switching Centers***
- ***2588 Base Stations***
- ***129 Flexent Mobility Managers***
- ***230,000+ items specified on 10,000+ orders delivered***
- ***155,000 Circuit Packs***
- ***155,280 Cables***
- ***31,056 RF Components***

Lucent Technologies engineers and project manages end-to-end integrated solutions with multiple products, services and third party material

Develop and Project Manage the Solution

Consultation	Network Engineering	Project Scheduling	Supply Chain Management	Engineering Technical Solutions	Delivering the Solution	Installing the Solution	Integrating the Solution	Maintaining the Solution

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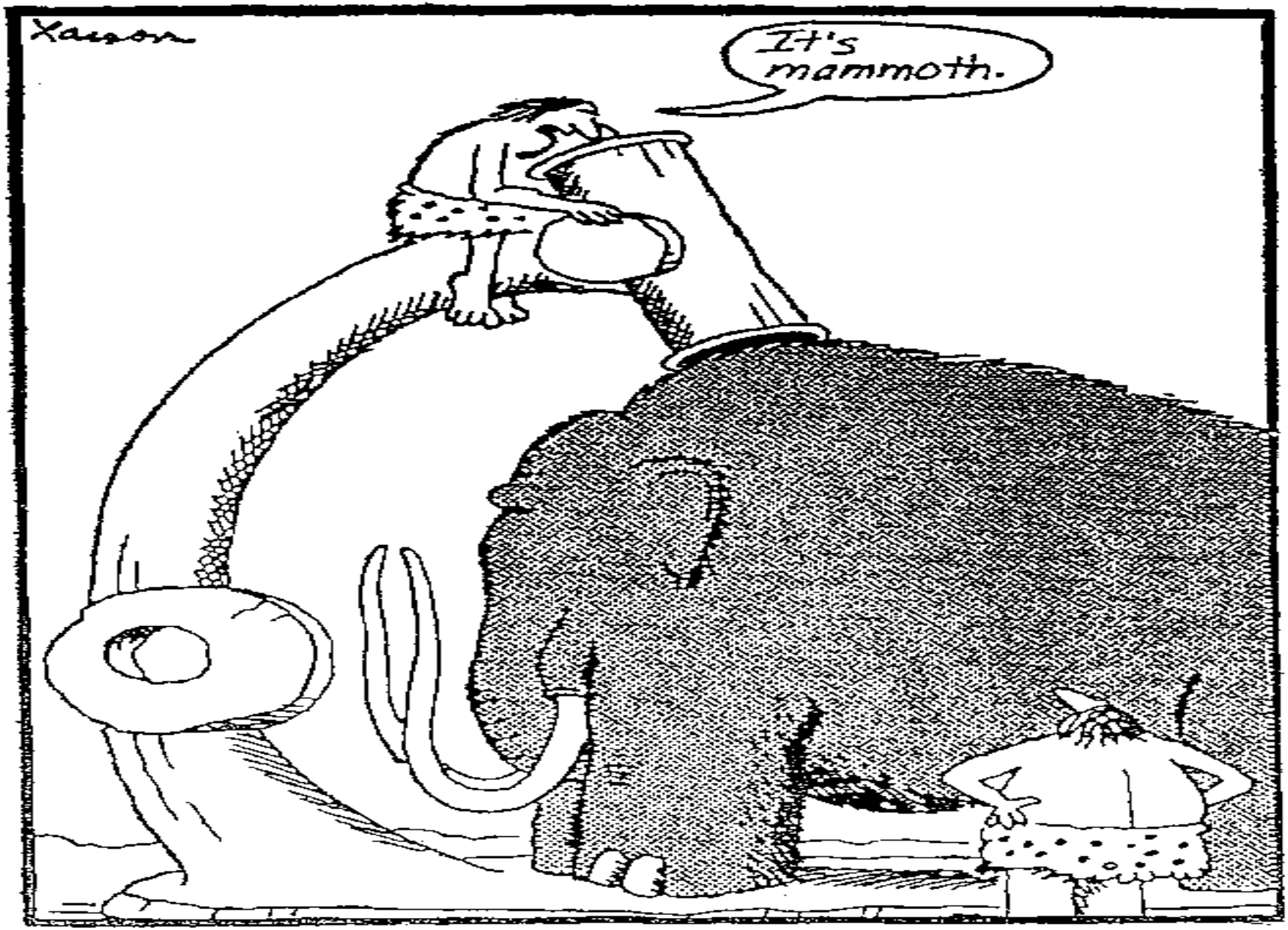
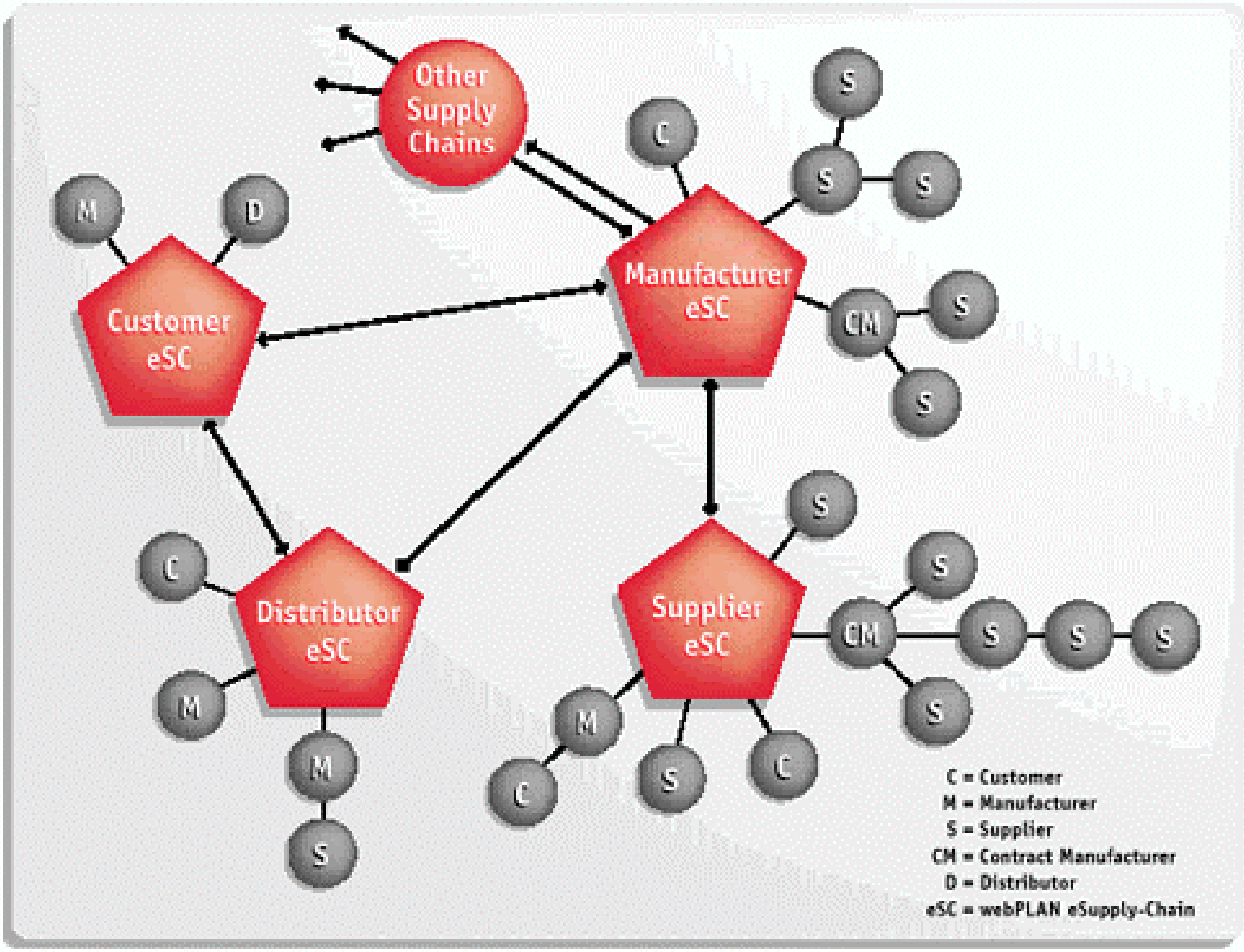

Xauon
It's mammoth.

Integrating SCs THE NEW MODEL



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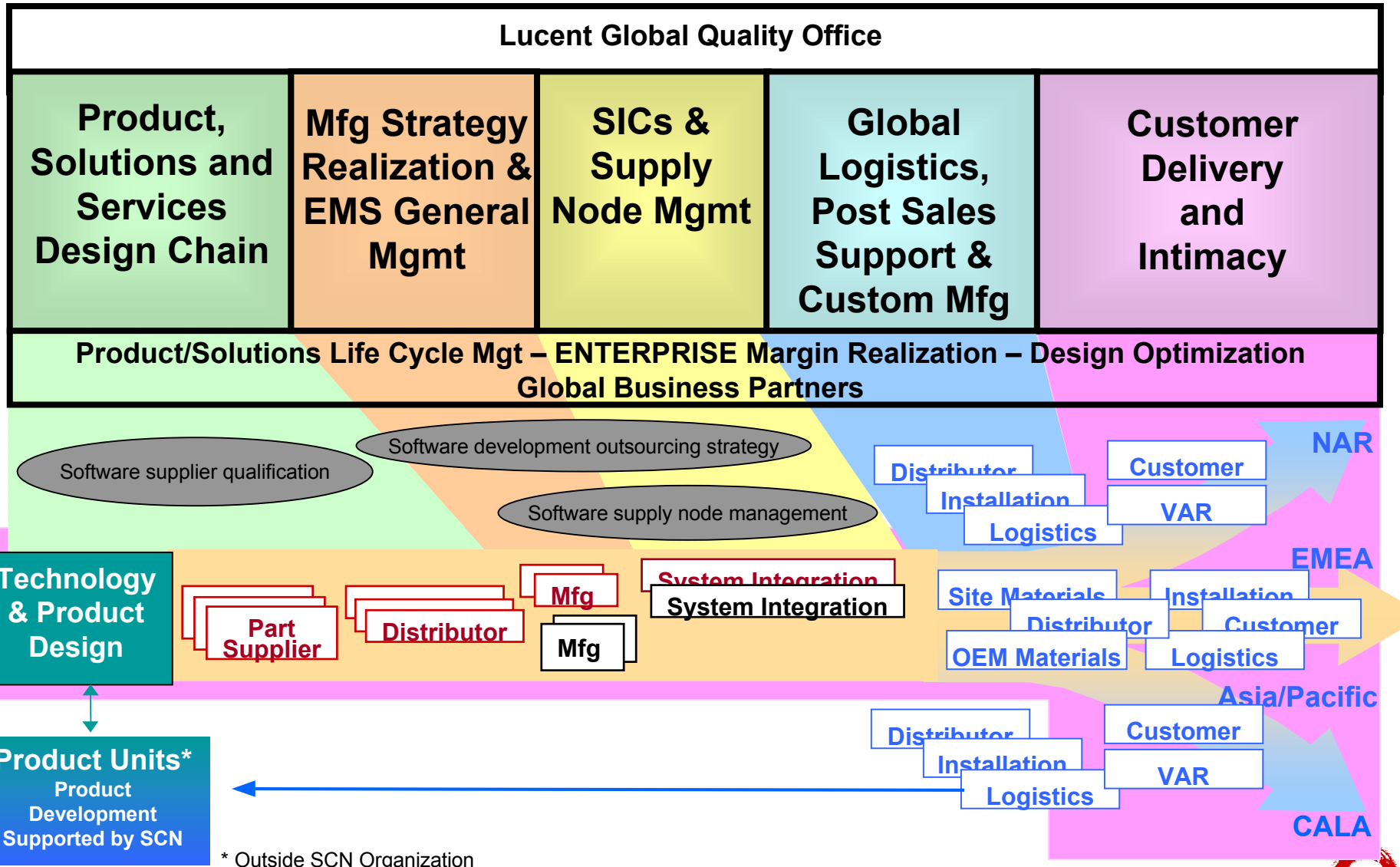
One Lucent Supply Chain

End to End Structure for Our Customers



* Outside SCN Organization

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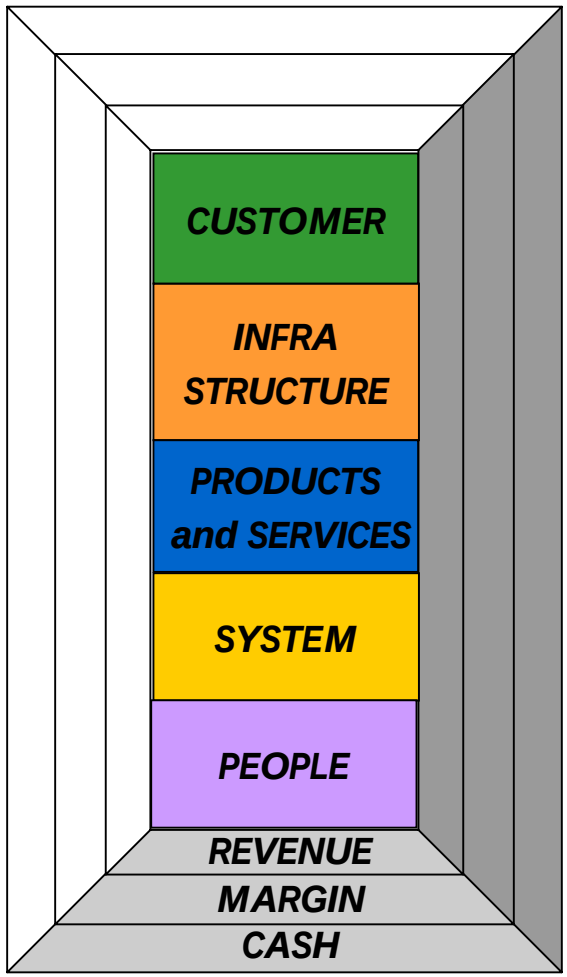
Zero Latency Customer/Growth Intelligent Value Web

Path to profitability



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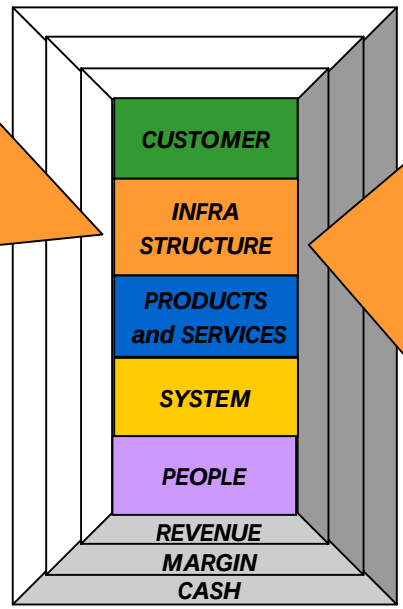
Adapting our Manufacturing Model, SC Infrastructure

Where we WERE…

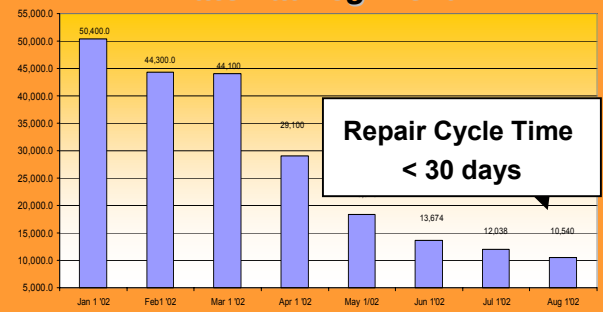
- *Multiple supply nodes not well connected with little flexibility*
- *Manufacturing, warehousing and distribution fixed cost could be improved*
- *Excessive worldwide late repair backlog, yielding high repair cycle time*
- *Inventory improvements were needed*
- *Difficult to track repair and logistics expense*



Where we ARE…

- *One global Supply Chain Networks organization*
- *Transferred $1B+ of manufacturing spend from fixed to variable cost*
- *Inventory reduced from 8 Billion to 632 Million or 1.3 turns to 7.5 turns*
- *Managing EMS providers for margin contribution improvement*
- *Reduced worldwide late repair backlog by 80% (over 50K to ~10K in eight months)*

Worldwide Repair Supplier Late Backlog Trend



OPPORTUNITY	WERE	ARE
FACTORIES	29	5 SIC's
FACTORY FLOOR	+10M SF	< 1M SF
MFG BUDGET	$1.9B	~$150M
LU REPAIR CTRS	16	4
MANAGED WAREHOUSES	500+	0 [50+ LPs]

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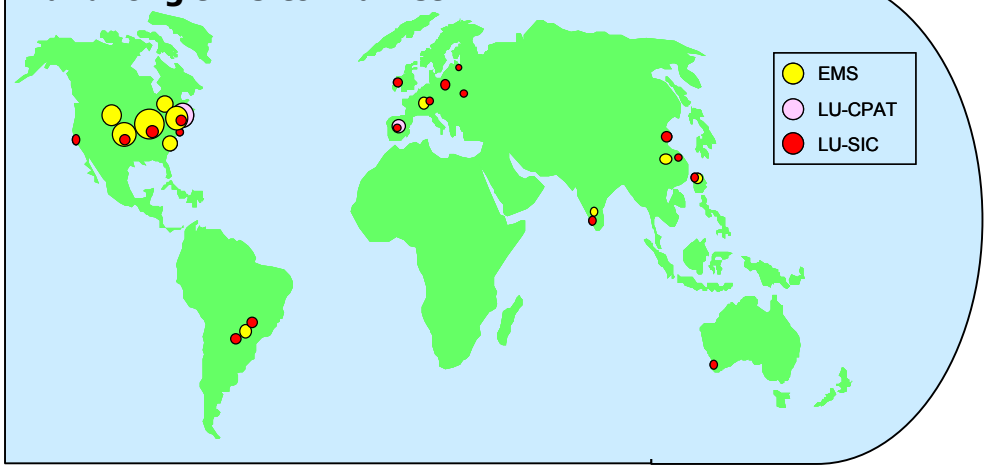
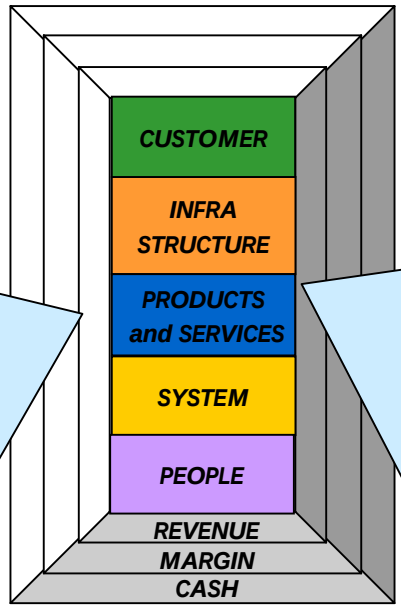
Product and Supplier Focus

Where we WERE…

- **Technology and supplier sourcing strategy improvement needed**
  - **Over 3000 suppliers, over 1000 accounted for less than 40% of total spend**
- **Limited focus on low-cost manufacturing regions**
- **Designed unique & proprietary products and components that resulted in high lifecycle cost and long time-to-market**

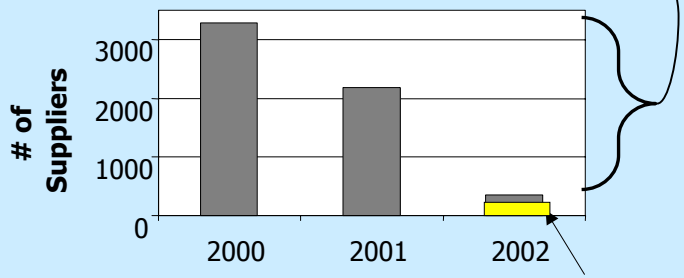




Where we ARE…

- **New product introduction process in place**
- **Sourcing strategies aligned around strategic suppliers**
  - **Reduced supply base to 60 key suppliers accounting for 80% of spend**
- **90% of circuit packs manufactured in low-cost regions**
- **50-90% Common Assets/Components Shared across product portfolio**

Drove 35%-55% reduction in component costs



80% of spend with 60 suppliers

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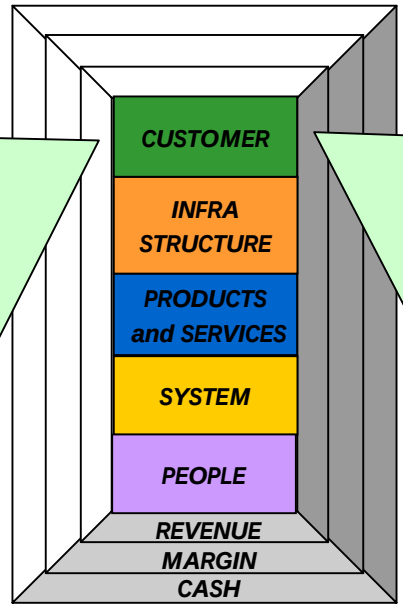
Customer Focus

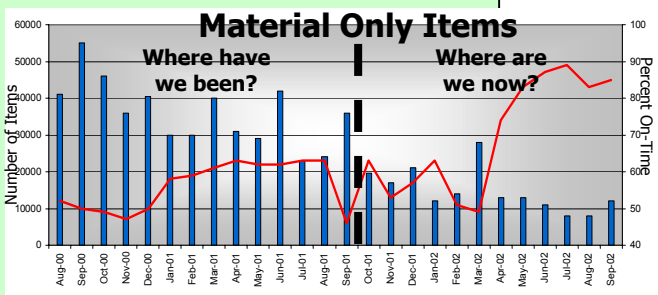
Where we WERE…

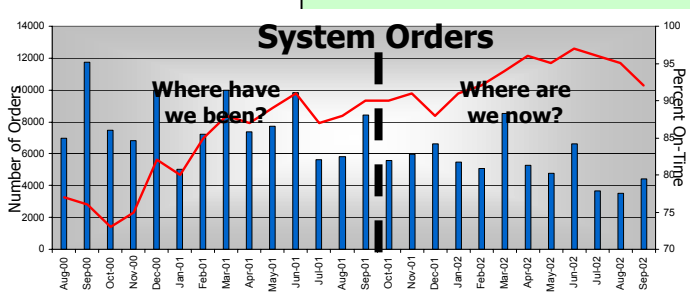
- **Weak demand planning performance making it difficult to adapt to large fluctuations in demand**
- **Delivery performance was not meeting customer expectations or business objectives**
- **Full-stream advocacy of customer interests not totally integrated**
- **Diversity content was mostly managed on a reactive basis**



Where we ARE…

- **Refinements in forecasting, demand planning**
- **Engaging partners in order to win bids**
- **Delivery performance improved with, Systems Orders: ~80% to 96% ('01 to '03)**
  Material Only: 50% to 87% ('01 to '03)
- **Unique Customer Delivery Organization created as the "One Lucent" face with end-to-end supply chain accountability for our global customer base**
- **Active Supply Chain and Partner engagement in the B&P process**





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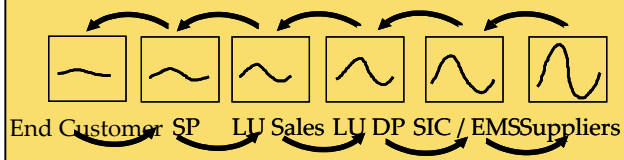
Supply Chain Systems Re-architecture

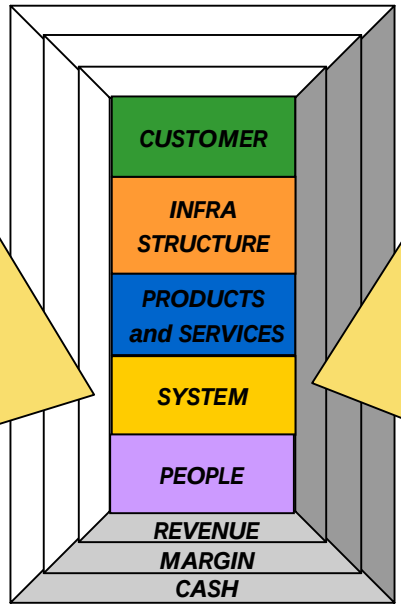
Where we WERE…

- **Bullwhip effect on demand**
- **Order visibility was difficult to achieve**
- **Lack of centralized global inventory system**
- **Collaboration architecture needed to be globally deployed**
- **Database fragmentation and redundancy**

"The Bullwhip Effect"

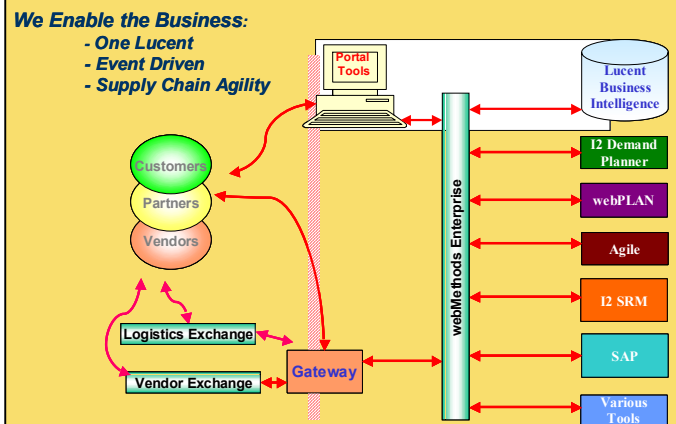


Information lags
Delivery lags
Over- and underordering
Misperceptions of feedback
Chain accumulations



Where we ARE…

- **Supply Chain Portal - real time web-based connectivity between LU and suppliers**
- **Enabled B2B and web-based visibility with Tradestream, Lucent's 1st global architecture**
- **Data aggregation from 18 international LU locations, 48 global EMS partners, and 11 broker & distributor locations**
- **Product collaboration between Lucent and global EMS partners through Genesis/Agile**



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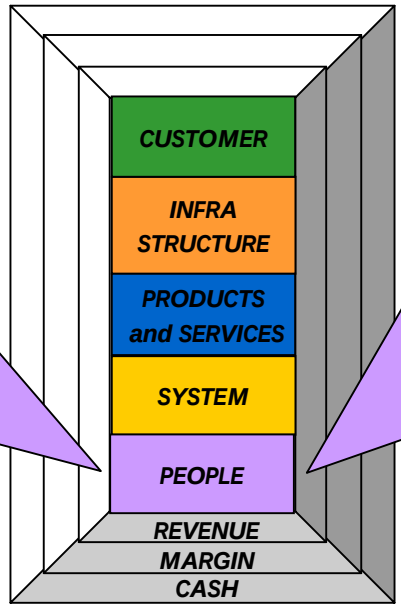
The SCN Story - Our People

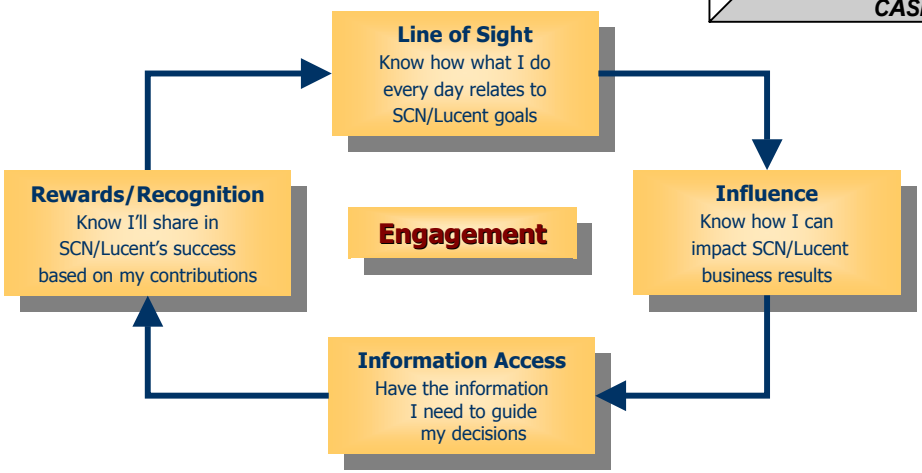
Where we WERE…

- *Functionally-divided, silo mentality*
  - *Poor communication both between and within organizations*
  - *Little leveraged learning*
  - *"Not-invented-here" mindset*
- *Command-and-control environment, slow decision-making cycles*



Where we ARE…

- *ONE LU team, fighting the battle to make Lucent profitable*
- *Building leading-edge supply chain management competency and leadership programs*
- *Providing common messaging, capabilities, and channels that drive leadership in aligning and engaging associates toward optimum performance*



Critical Areas	*Traditional Action Model*	*Extraordinary Action Model*
▪ Practice of Leadership	▪ Strong directional leadership	▪ Leading to create inspired action & spirit
▪ Team and Organizational Alignment	▪ Whole = sum of the parts	▪ Whole > than sum of the parts
▪ Personal Accountability for Results	▪ Owning my results	▪ Owning total results as well individual results
▪ Business Strategy implementation	▪ Built and executed from the past	▪ Built and executed from the future

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Indirect Procurement

An Additional Opportunity

- Indirect Procurement Outsourcing – An arrangement where a company contracts with a third-party to provide some or all of the company's indirect procurement (spend such as travel, MRO, administrative supplies, property services, etc.) activities.



Lucent Objectives:

- **Focus on core competencies**
- **Reduce purchasing cycle time and costs**
- **Reduce off-contract or maverick spend**
- **Standardize global processes and systems**
- **Improve quality as well as tighten controls**
- **Increase end user satisfaction**

Results:

- **Reduced headcount**
- **Reduced average order processing time from 3 weeks to 2 days, unit costs were reduced by up to 25%**
- **Reduced maverick spend from 23% to 8%**
- **Deployed common platform in 30 countries and to over 900 locations in less than 1 year**
- **Reduced multiple manual touch-points**
- **Remove black hole syndrome – lack of confidence in system**

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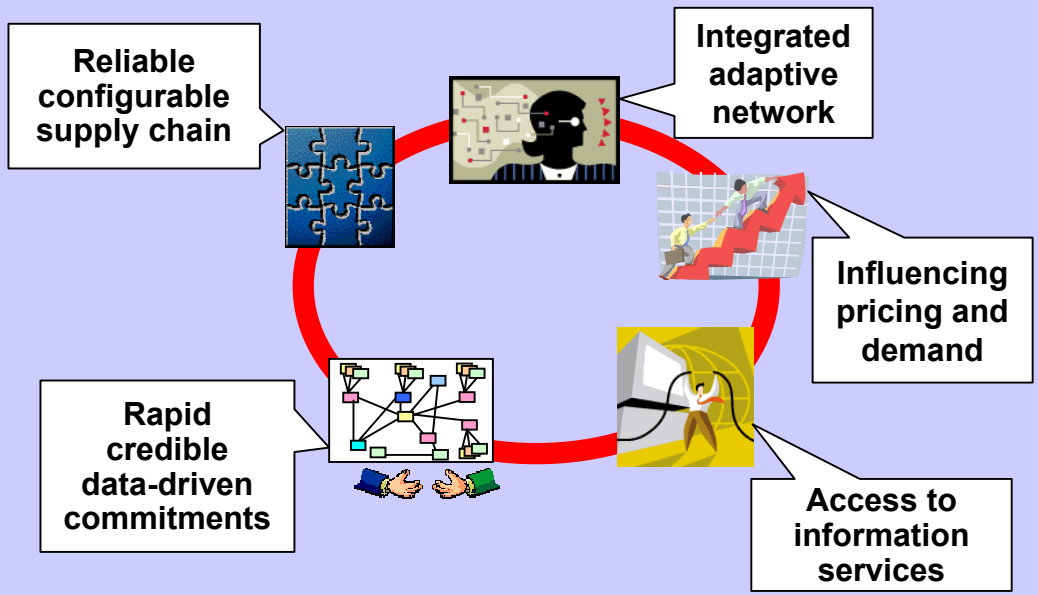
The SCN Story

STRATEGIC AREAS OF FOCUS

- Creative Force, Generating Profitable Growth
- Awesome Execution
- Unmatched Customer Value
- Winning Environment -- Winning Team

Where we WILL BE…2004 and beyond

- **Zero-latency processes: Bids & proposals, Quote-to-Cash**
- **Technology development aligned with business fundamentals**
- **Full-stream margin modeling with supplier integration**
- **Relentless focus on *Awesome Execution***
- **Marketing bundled supply chain services offer**



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Summary and Conclusion - Customer Focused

Differentiating the Customer Solution thru Supply Chain Power and Innovation…

- **Redesign of the Supply Chain's Organizational and Physical Architecture focused on the customer, profitability and agility**
- **Engagement of our Supply Chain partners so we can collectively address the market, pricing and economic pressures in the industry**
- **A Supply Chain architecture that leverages a virtual network of "plug and play" supply/sourcing partners with an e-enabled IT backbone**
- **"Zero Latency" across the extended supply chain to drive top line growth while minimizing supply chain liabilities**
- **Profitability Mapping, Accountability and Supply Chain Drivers focused on Margin Improvement – prioritize and execute**
- **Leverage of Lucent's Supply Chain strategy, transformation and execution management to apply to our customers and other industries**

Winning Customers and Driving Shareholder Value through Leadership in Supply Chain Management - "*Awesome Execution*"

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Summary and Conclusion – Product Design Chain

Linking the design chain and supply chain for profitability, reliability, and interval

- **Lucent wide gross margin management and modeling of key cost drivers**
- **One organization linking product design to Lucent's extended supply chain through:**
  - **Setting market-based target costing**
  - **Managing and leveraging strategic supplier relationships to control costs**
  - **Selecting components and technologies based on sourcing strategies**
  - **Ensuring product reliability through manufacturing and test engineering processes**
- **Consistent Lucent-wide framework that aligns technology development to business fundamentals across product management, development, supply chain, services, and 3rd party partners**

Delivering cost effective, value added solutions to the customer - "*Creative Force, Generating Profitable Growth*"

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"Impossible" Is Only a Point of View



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