
Enabling Supply Chain Effectiveness through E-Commerce

**Weyman Watson
Manager, Consulting Services**

**NAPM -- Electronic Commerce '98
Applying Technologies to Optimize Supply Management
Phoenix**

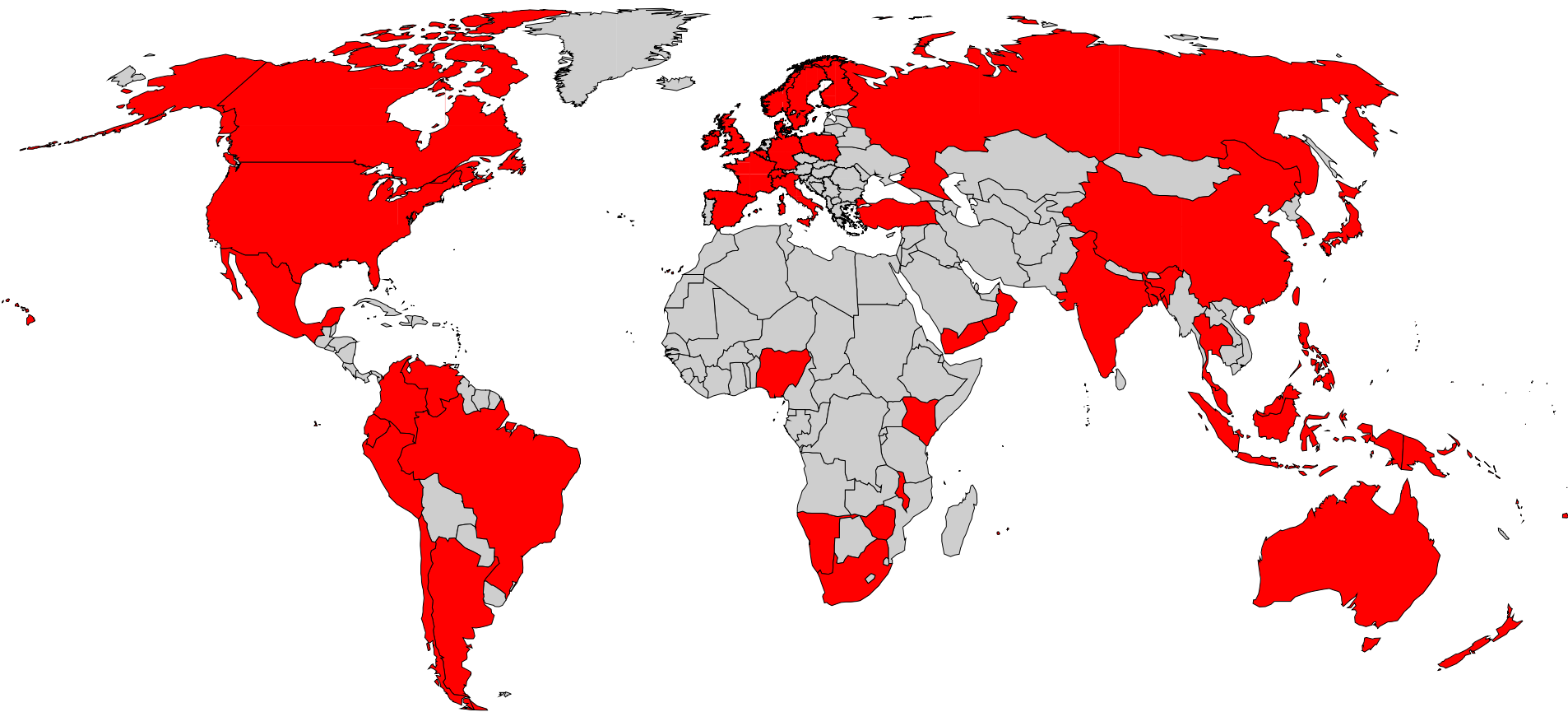
November 16, 1998



The BOC Group

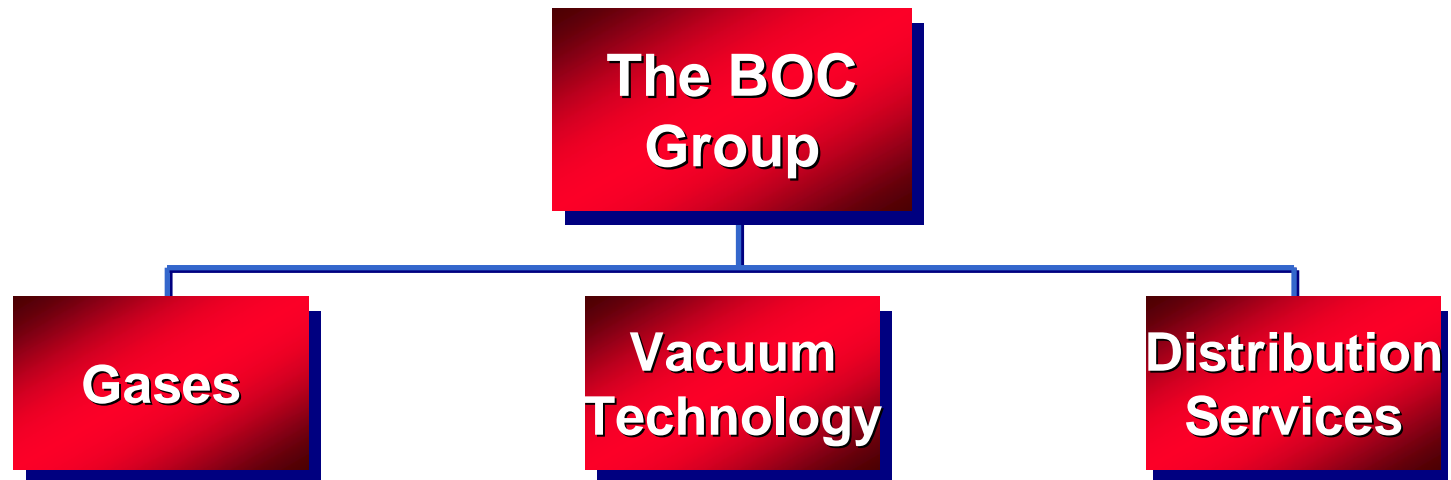
A Global Company
Operating in Over 60 Countries with
Total Sales in 1997 of US\$6.4 Billion

Operating Countries



Organization

Three divisions employing 35,000 people
around the world



BOC Gases -- Products and Markets

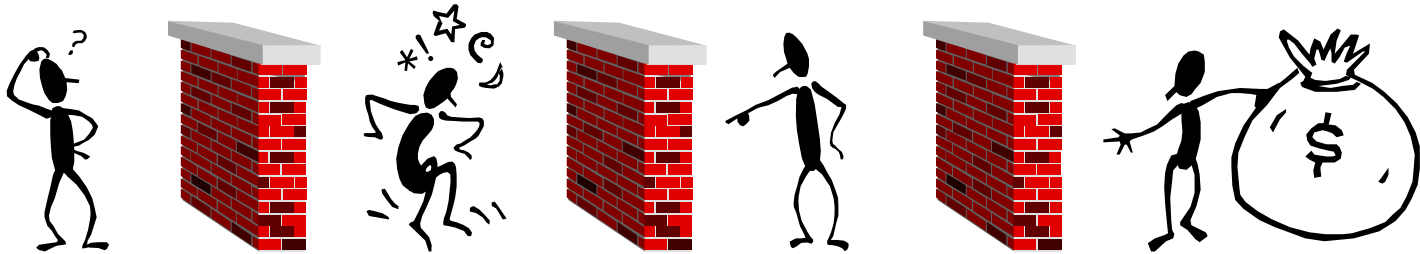
Products	Atmospheric Gases <ul style="list-style-type: none"> • Oxygen • Nitrogen • Argon • Ozone 	Carbon Dioxide	Helium	Hydrogen	Special Gases
Markets	Steel/Metals Chemicals Health Care Pulp & Paper Electronics Food Glass Aeration Environmental	Food Carbonation Water Treatment Fumigation	MRI Balloons Breathing Mixes Lasers Electronics	Electronics Chemicals Heat Treating Glass	Electronics Lighting Lasers

Gases Products are Delivered in a Variety of Forms



Supply Chain Management as a Driver for Improved Supply Chain Effectiveness

Getting from...



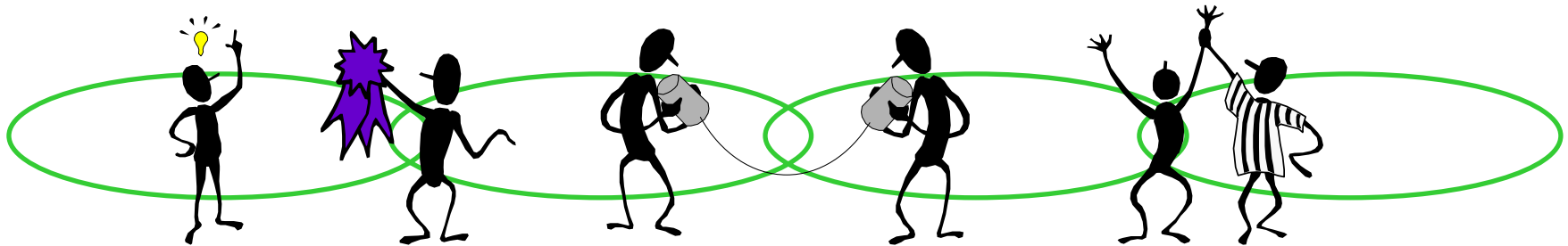
**SUPPLIER'S
SUPPLIERS**

SUPPLIER

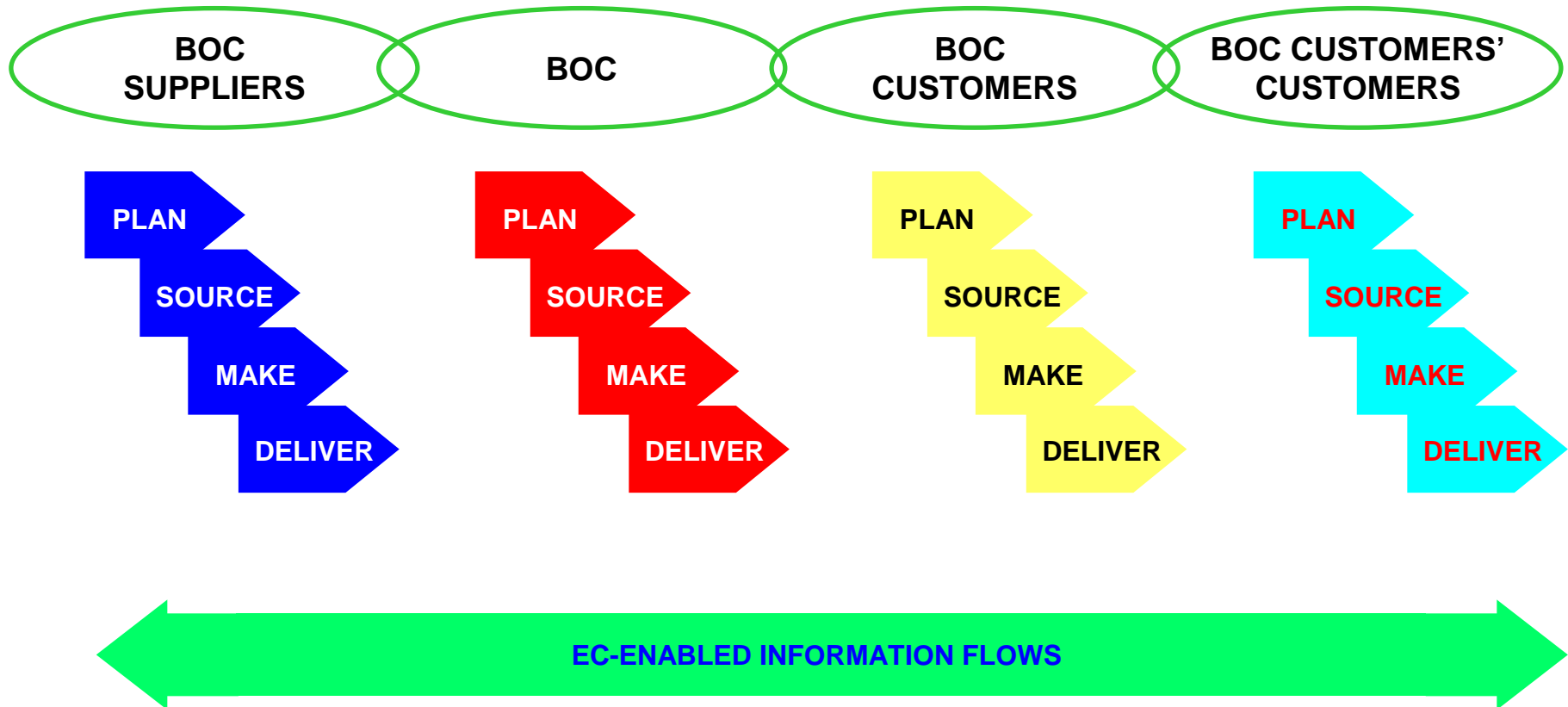
CUSTOMER

**CUSTOMER'S
CUSTOMERS**

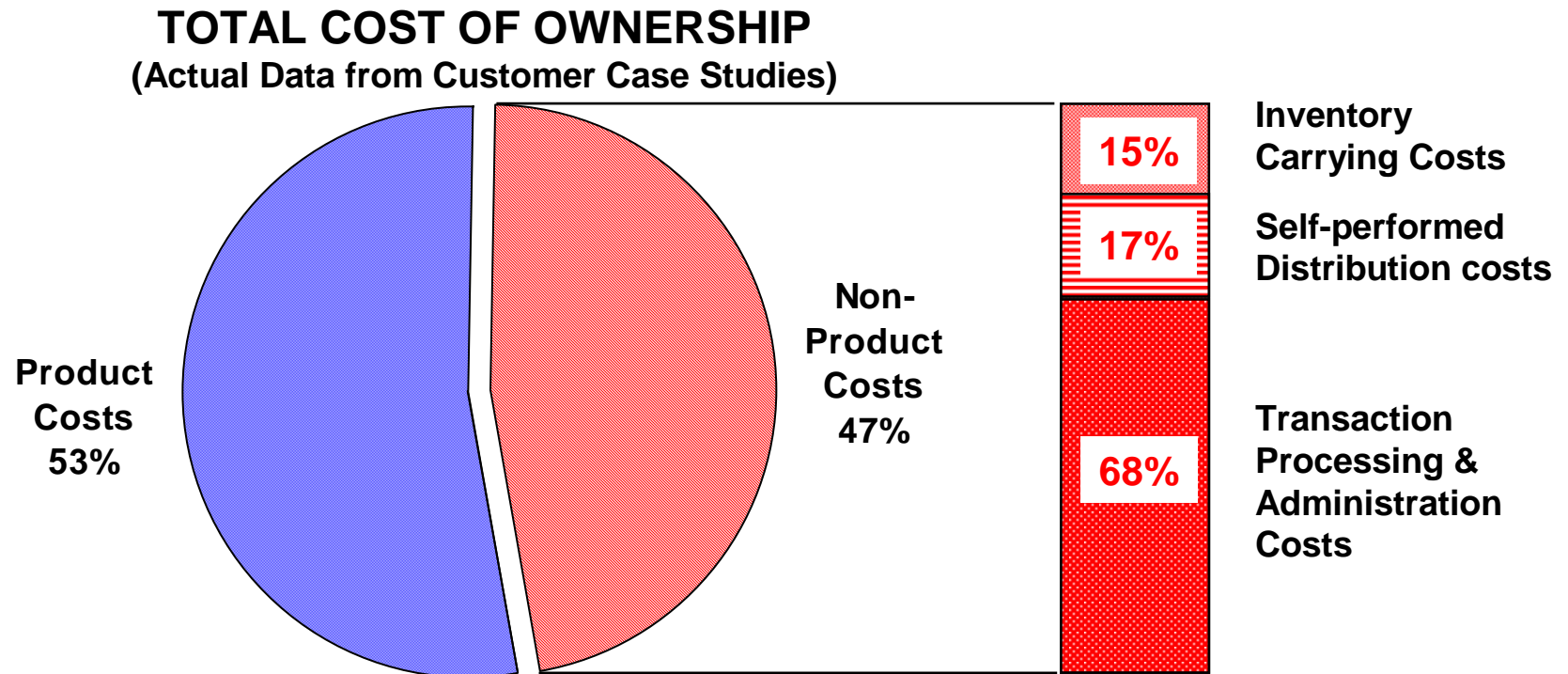
To...



E-Commerce is an Enabler for Supply Chain Management



The Value Proposition for Users of Industrial Gases



Streamlining Key Supply Chain Processes

Focal Points for Today's Discussion

- Order-To-Cash Cycle
- Inventory Management

Overall Goal = Reduce Total Cost of Ownership



Streamlining Key Supply Chain Processes

● Order-To-Cash Cycle

– PROBLEM

- » High transaction costs -- lots of PAPER
- » Complicated management accounting
- » Ordering and billing errors

– BOC's SOLUTION

- » Web Catalog Ordering
- » Electronic Billing
- » Integration with Customer ERP for specialized data feeds
- » Electronic Payment -- both ACH and P-Card

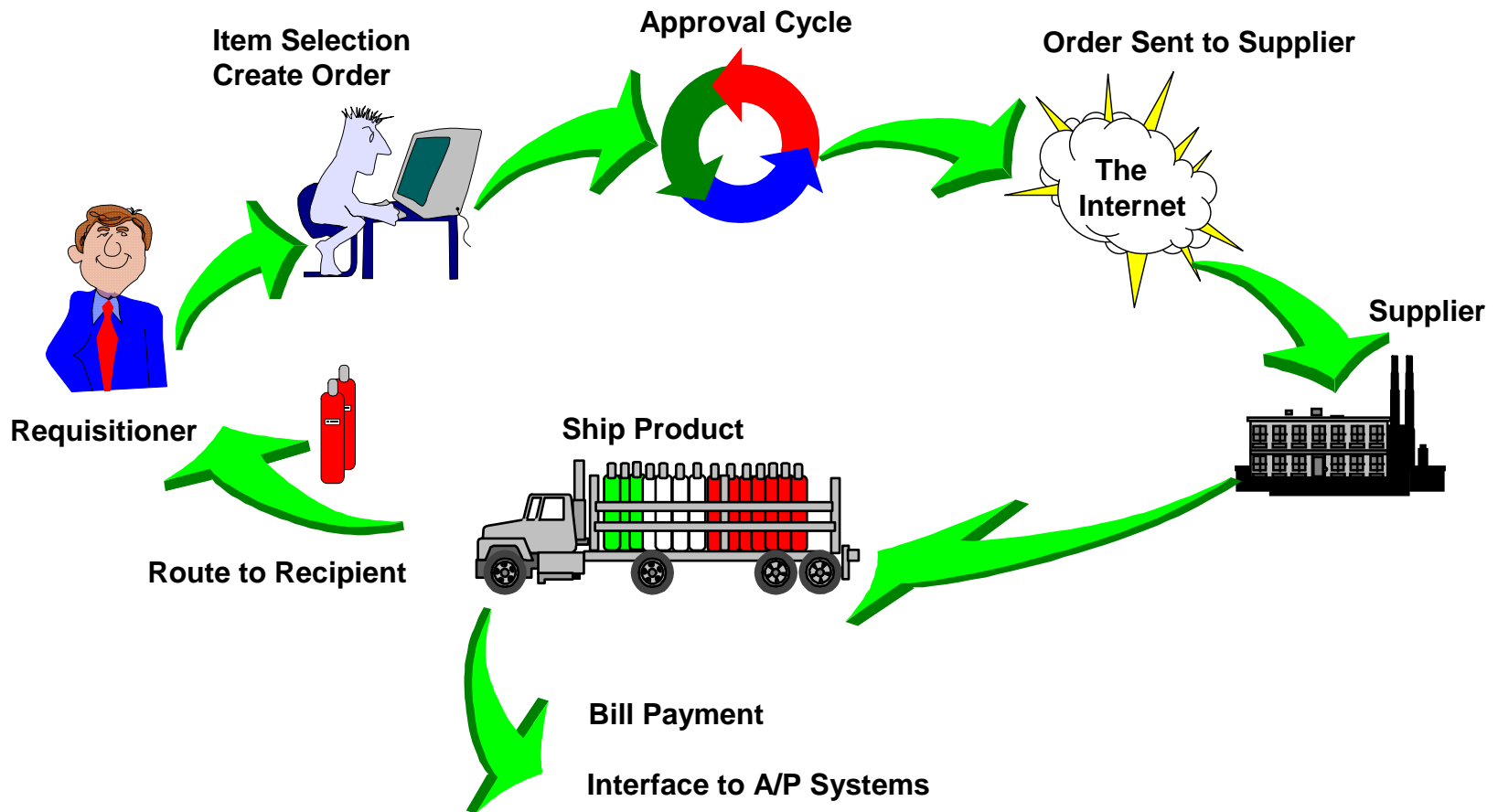
– IMPACT

- » Simplified administration for sourcing gases
- » Lower transaction costs
- » Greater accuracy
- » Improved auditability

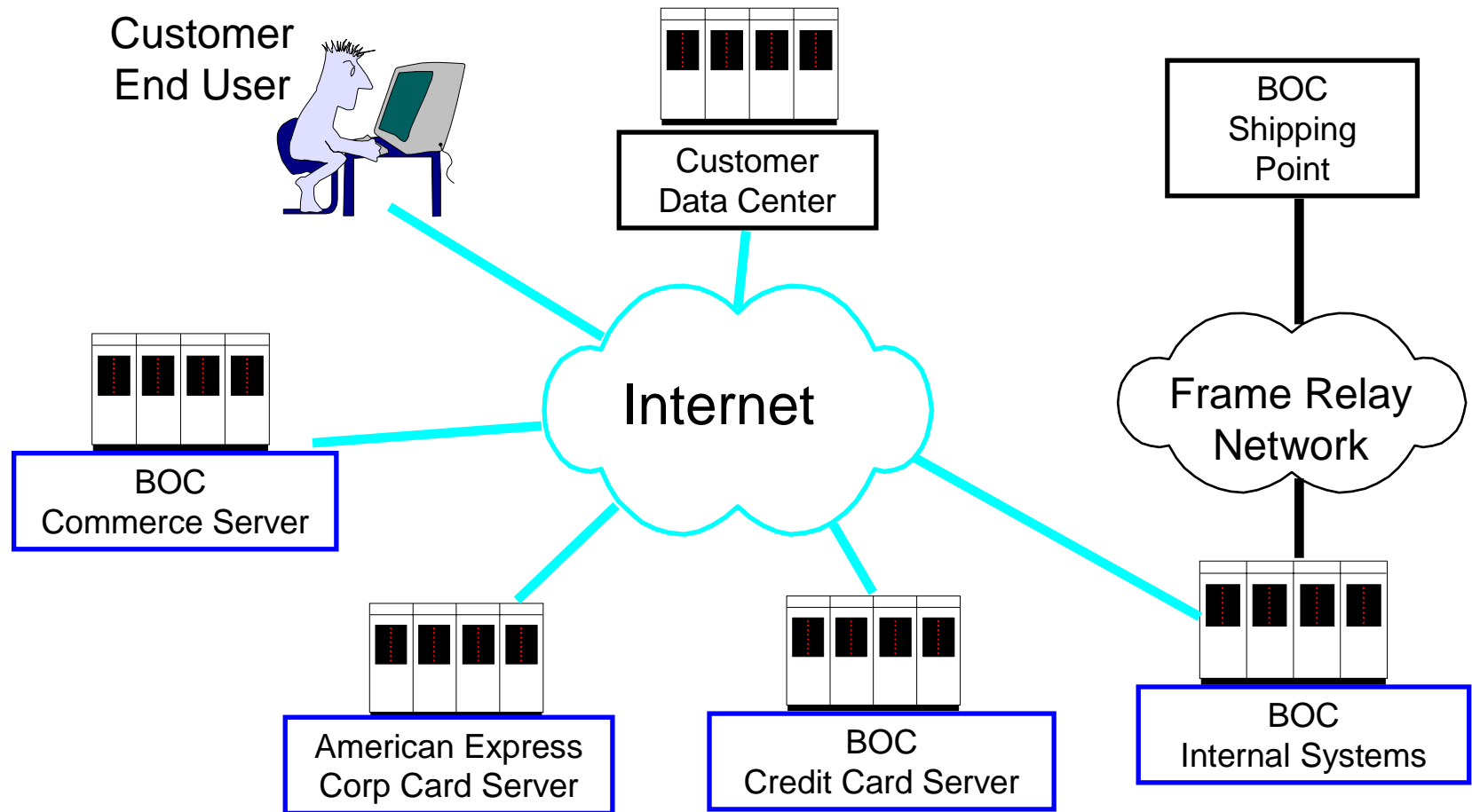


● Inventory Management

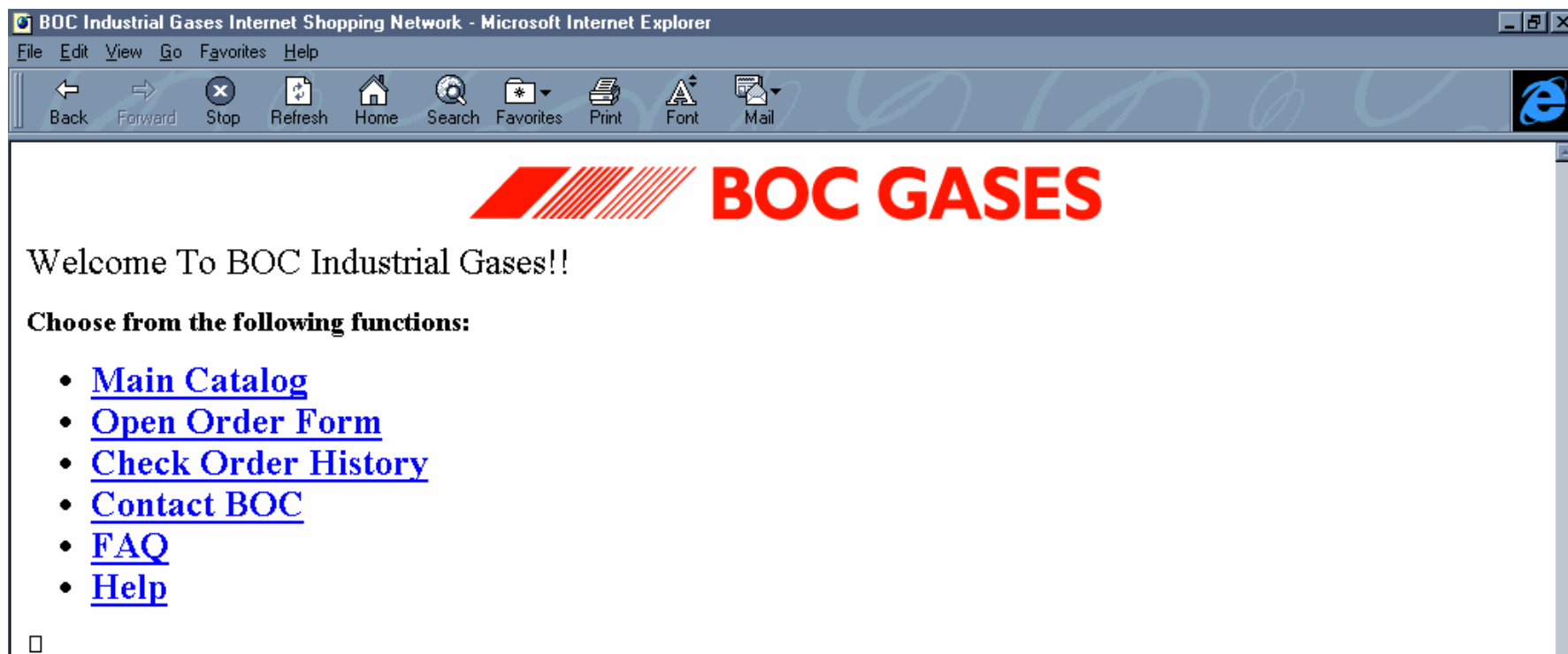
The “Order-To-Cash” Cycle



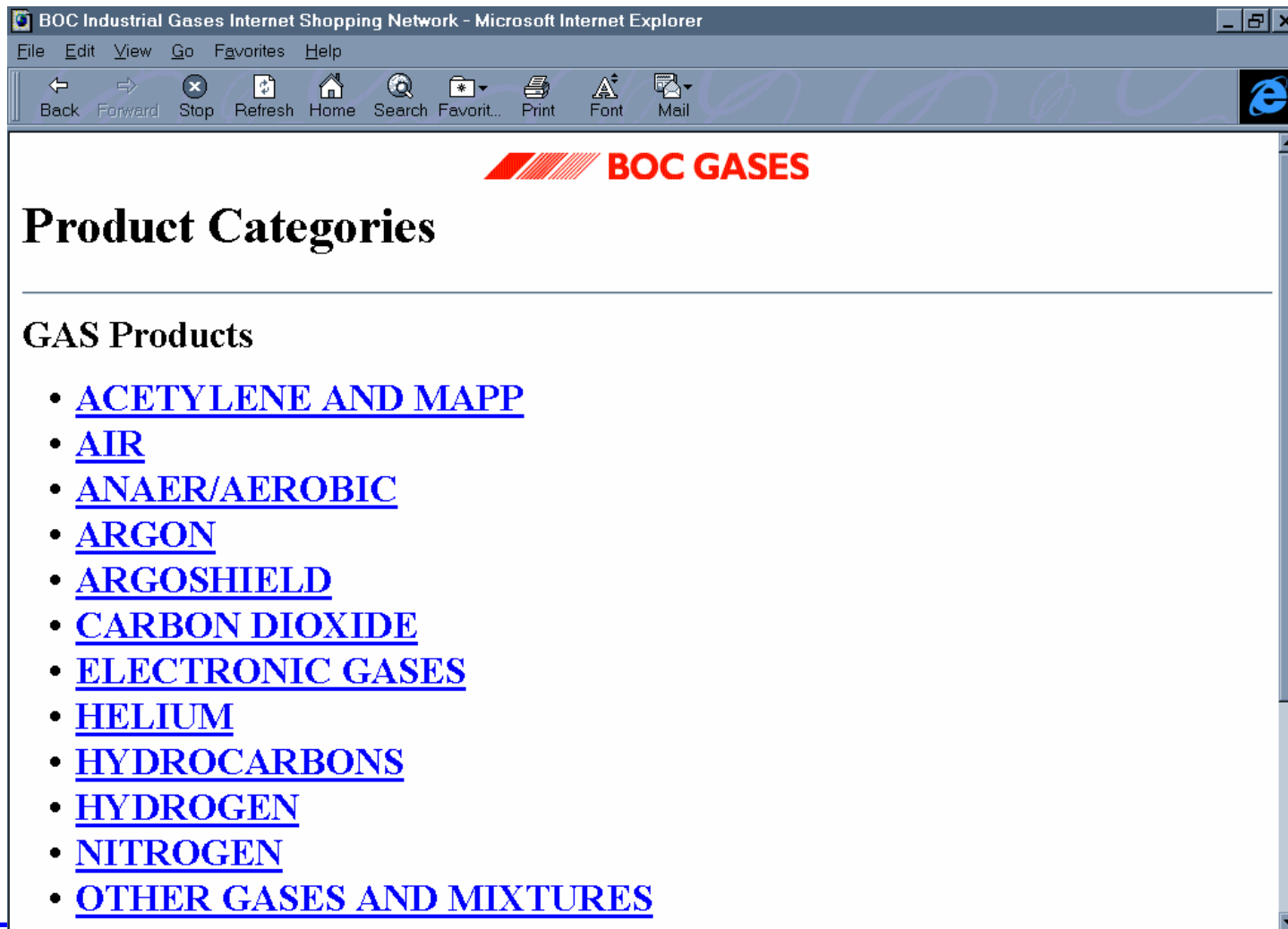
BOC's Internet Order-to-Cash Management System



BOC's Web Catalog



BOC's Web Catalog




BOC's Web Catalog

BOC Industrial Gases Internet Shopping Network - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites Print Font Mail

Search the Internet

 **BOC GASES**

ARGON PRODUCTS: [Further Description](#)

	Item Description	Item Code	Unit Price	Unit of Measure
Add to Order	ARGON 336 SIZE	AR T	\$22.68	CYL
Add to Order	ARGON PREPURE 4.8 200SZ	RS 33101300200	\$49.00	CYL
Add to Order	ARGON PREPURE 4.8 300SZ	RS 33101300300	\$62.00	CYL
Add to Order	ARGON UHP 5 200SZ	RS 33101400200	\$71.00	CYL
Add to Order	ARGON UHP 5 300SZ	RS 33101400300	\$92.00	CYL
Add to Order	ARGON RESEARCH 5.6 200SZ	RS 33101500200	\$241.00	CYL
Add to Order	ARGON RESEARCH 5.6 300SZ	RS 33101500300	\$251.00	CYL
Add to Order	ARGON 6 152SZ	RS 33101600152	\$416.00	CYL


[BOC Home Page](#) [Main Catalog](#) [Open Order Form](#) [Check Order History](#) [Contact BOC](#) [FAQ](#)

BOC's Web Catalog

BOC Industrial Gases Internet Shopping Network - Microsoft Internet Explorer

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 **BOC GASES**

This is the current order for boodemo. You can fast path to the [Main Catalog](#).

Current Order Form

	Product	Unit Cost	Purchase Quantity	Return Quantity	Total Cost
Remove	HALOCARBON 318 99.99	\$2800.00	<input type="text" value="1"/>	<input type="text" value="0"/>	\$2800.00
Remove	ARGON UHP 5 300SZ	\$92.00	<input type="text" value="5"/>	<input type="text" value="2"/>	\$460.00
Remove	NITROGEN LIQ 240L, 022PSIG	\$42.00	<input type="text" value="10"/>	<input type="text" value="5"/>	\$420.00
Totals	-	-	16	7	\$3680.00

[Update # Orders/Returns](#)

[Cancel Order](#) [Submit Order](#) [Help](#)


[BOC Home Page](#) [Main Catalog](#) [Open Order Form](#) [Check Order History](#) [Contact BOC](#) [FAQ](#)

BOC's Web Catalog

BOC Industrial Gases Internet Shopping Network - Microsoft Internet Explorer

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Order Confirmation

Save this page to a file or print it as a receipt.

Order # 001011

Requisitioner Information

Requisitioner	Doug Bailey, bocdemo
Requisitioner Email Address	douglas.bailey@us.gases.boc.com
Requisitioner Phone Number	908-508-3720
BOC Account Number	12345
Ship-To Name	Doug Bailey
Ship-To Address	575 Mountain Ave
City, State Zip	Murray Hill, NJ 079741234

Order Comments: Returns available for pickup from dock #4

Items Ordered

Item Code	Purchase Quantity	Return Quantity	Total Cost
RSG08904401	1	0	\$5.40
RS 33103400200	2	3	\$46.00

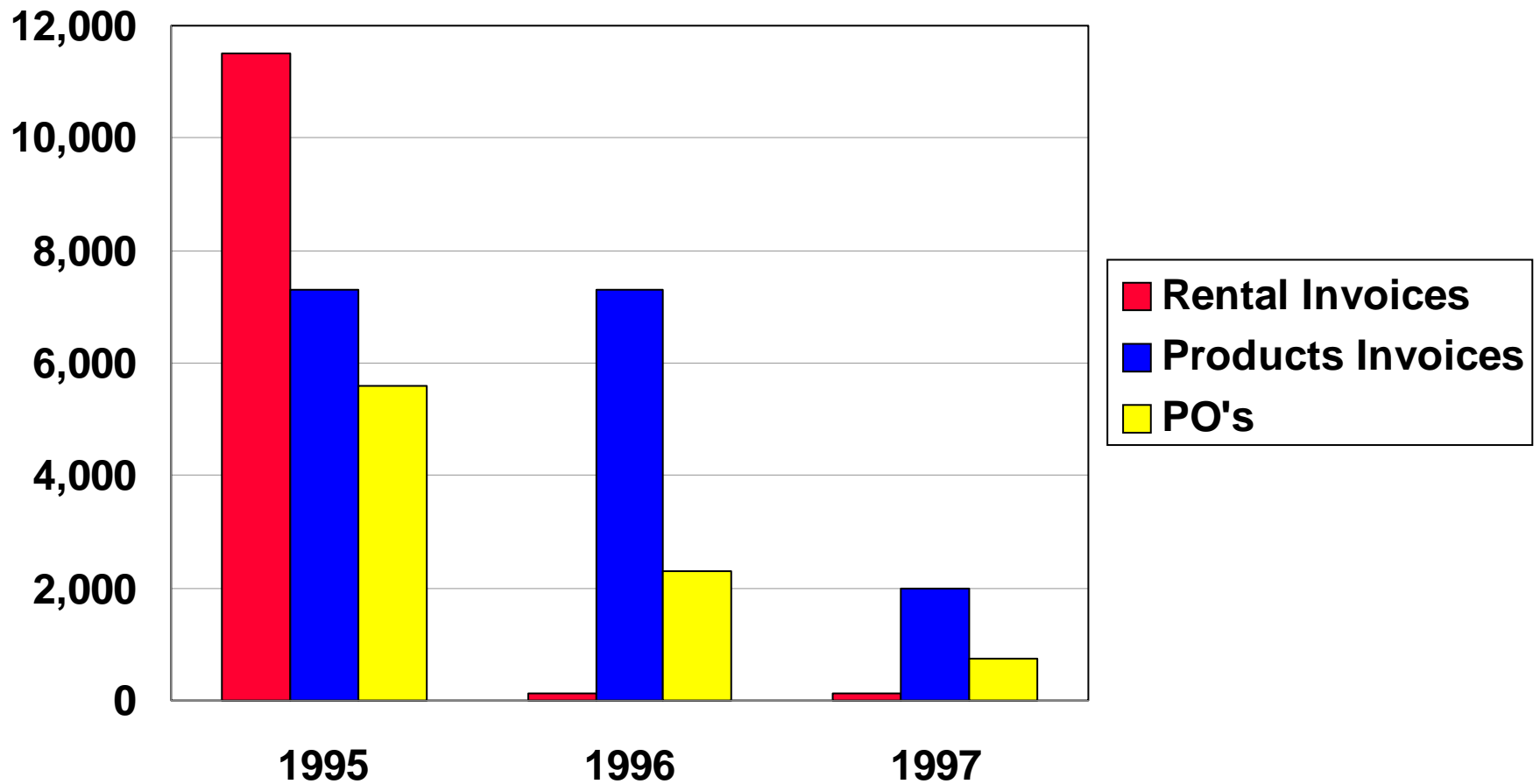
You just purchased 3 line item(s) totaling \$51.40.



BOC's Internet Catalog is not for the Casual Web Surfer

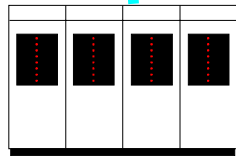
- **Not located at BOC's public Web Site**
- **Designed only for customers with supply contracts**
- **Secure access via a password-protected Web server**
- **Browser interface designed for efficiency, speed, and simplicity**
- **Customers see only items they've contracted to buy and agreed pricing**
- **Customers can build orders using historical order information**
- **Procurement Card authorization and settlement steps are integrated into the ordering process**
- **Catalog is dynamically created -- information is always up to date**

EC Drives Real Paperwork Reduction



BOC Takes It's Own Medicine

Vendor
Analyst



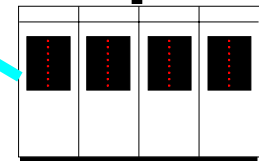
Vendor Data
Center

Internet

Exceptions
Management



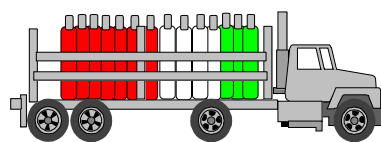
Frame Relay
Network



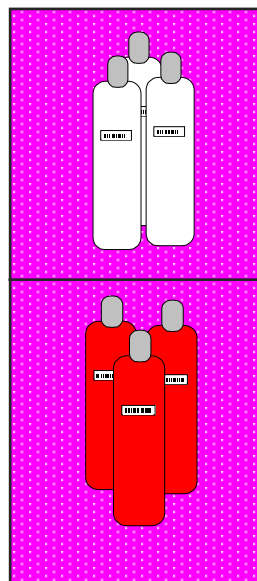
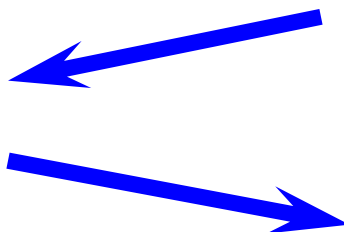
BOC Data
Center

Vendor Managed Inventory

Traditional Cylinder Management... Supplier's View



Gas Deliveries



Customer Cylinder Stock

?



?

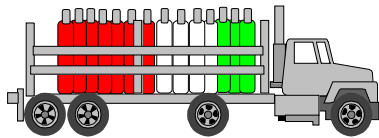


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Gas End Users

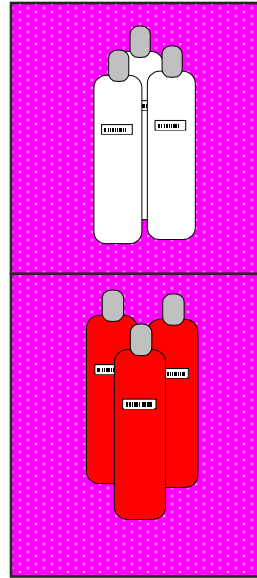
Traditional Cylinder Management... Buyer's View



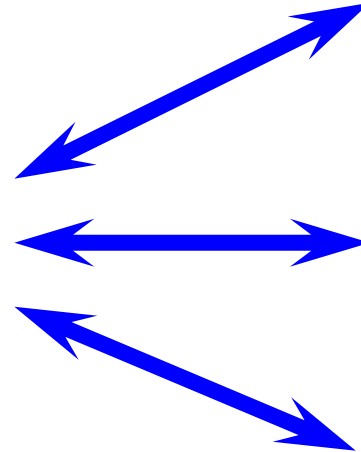
Gas Deliveries

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?

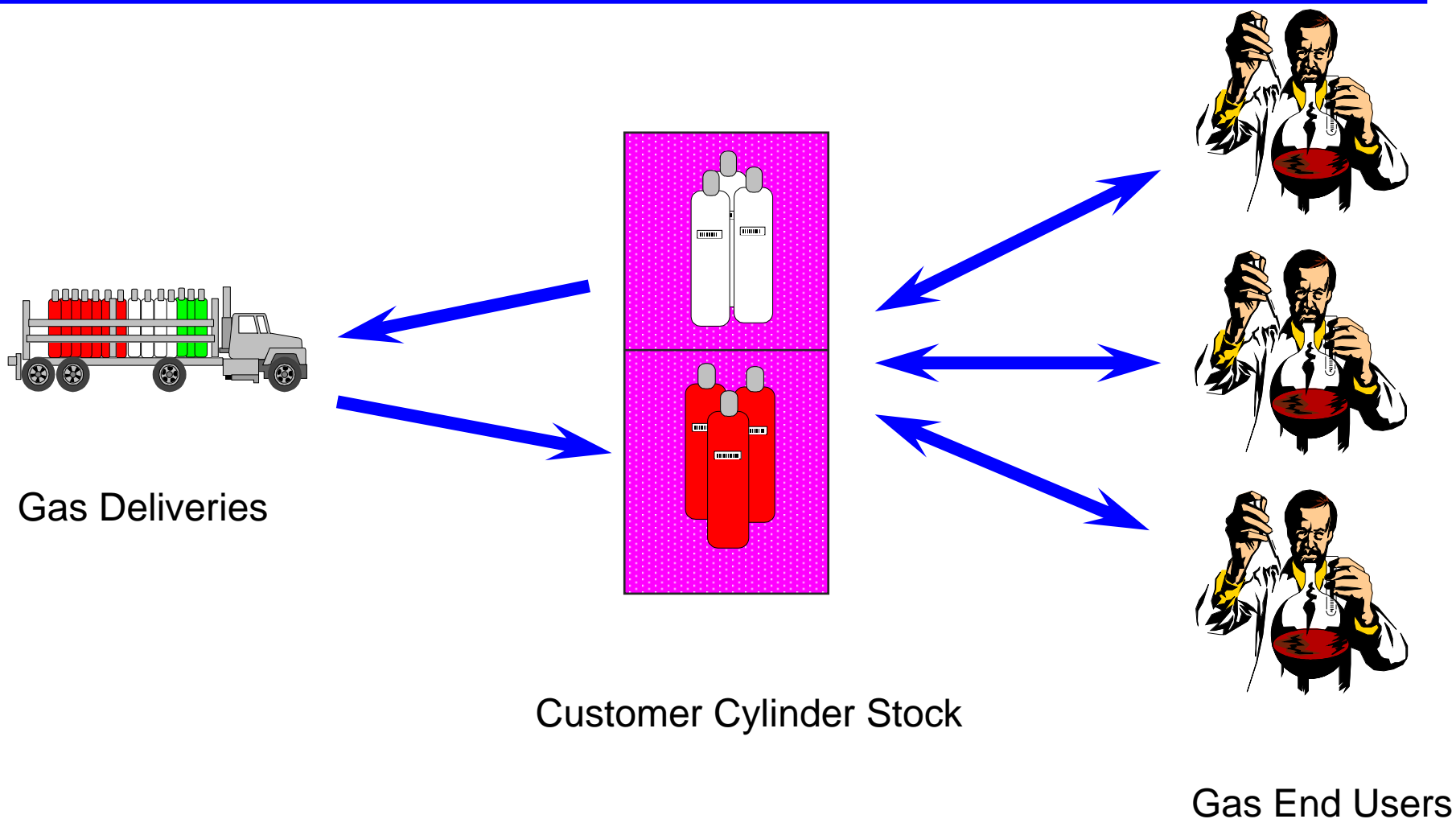


Customer Cylinder Stock

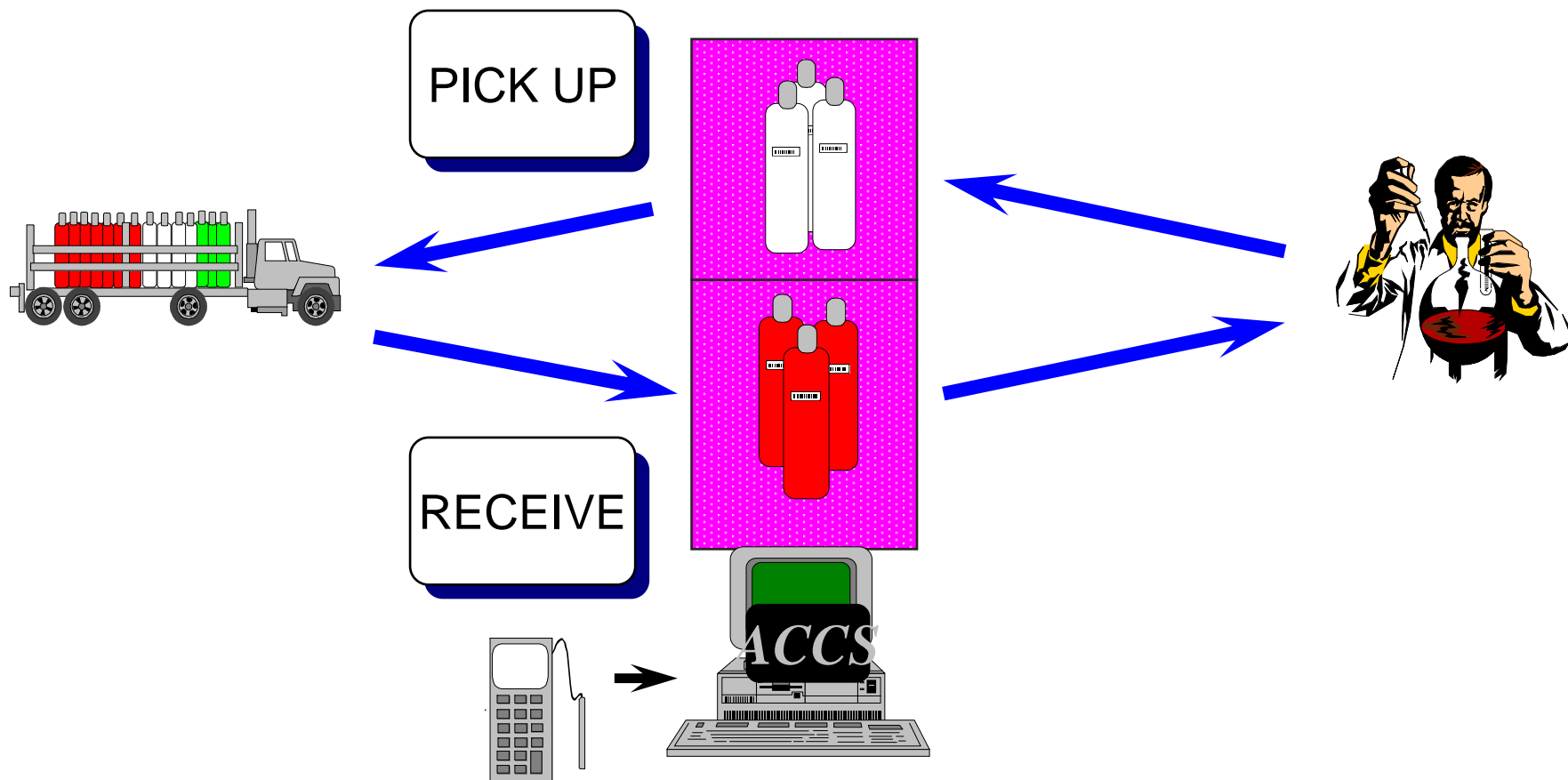


Gas End Users

End-to-End Tracking with BOC's *ACCS* System



Supply-Side Tracking with *ACC*S



ACCS Supply-Side Tracking

- **Shadows Supplier's Process**
 - Records Supplier Shipper Information
 - Aids in reconciliation with supplier paperwork
- **Cylinder Receiving**
 - Associates cylinder characteristics with bar code
 - Automatically establishes cylinder in database
- **Cylinder Pick Up or Delivery**
 - Automatically archives cylinder record

ACCS Supply-Side Tracking Screen

Cylinder Detail

File Help

Control # **123** Serial # **123** Status **RT** **12/04/1996**

Contents **BAEM** Size **2E** Owner **S** **BOC**

Description **Compressed Air - Medical**

Supplier Department Rent Audit Analysis

Received

Received **6/24/96**

Supplier **BOC**

Shipper **4**

PO # **5**

Release #

Location **ACCS**

Picked Up

Picked Up **12/4/96**

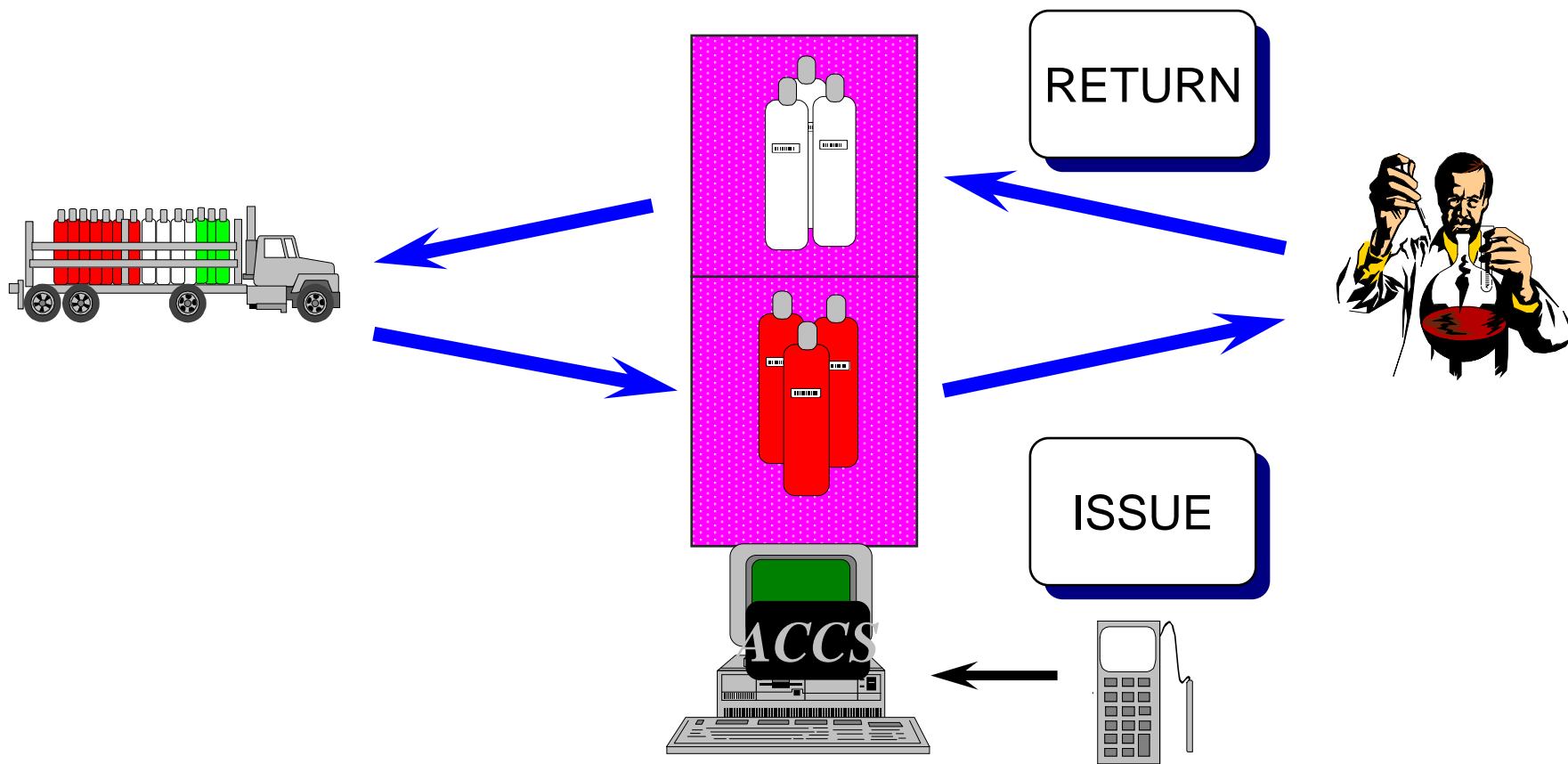
Supplier **BOC**

Shipper **114455**

Location **ACCS**

Navigation: < < > >

Demand-Side Tracking with ACCS



ACCS Demand-Side Tracking

- **Issue**
 - Assigns cylinder to end user
 - Generates Internal product invoice
 - Can print internal delivery ticket
- **Cylinder Returns**
 - Records returning department (discrepancies are reported)
- **Cylinder Transfers/Restocking**
 - Can transfer cylinders to another end user
 - Can restock unused cylinders previously issued

ACCS Demand-Side Tracking Screen

Cylinder Detail

File Help

Control # **123** Serial # **123** Status **RT** **12/04/1996**

Contents **BAEM** Size **2E** Owner **S** **BOC**

Description **Compressed Air - Medical**

Supplier Department Rent Audit Analysis

Issued 10/9/96	Department 123	Building STOR	Returned 12/4/96
Issue Ticket # IS000042	Contact 	Room 76876	Return Ticket # 19961204
Request # 	Account # 123-01	Charge \$23.50	Return Department 4855

Navigation buttons: << < > >>

Use **ACCS** Reports to Manage Cylinder Gases

- **Ask Key Questions**

- Where are my cylinders?
- Who has slow moving cylinders?
- How many hazardous cylinders are on site?
- What is our monthly usage?

- **Example Reports**

- On hand balance by Department/Project/Grant
- Activity by Internal End User
- Return Discrepancies
- Activity by Supplier (if multiple suppliers)
- Stock Status Report (Min/Max levels)

Or... export data to spreadsheet for further manipulation

Key Success Factors -- BOC's Experience in the US

- **Find Win-Win Objectives**

- Forge a Buyer-Supplier Partnership in Supply Chain Management
- Focus on “Total Cost of Ownership”
- Maximize Benefits through Inter-Enterprise Trust

- **Consolidate Vendors**

- Not just about Maximizing Leverage
- Maximize Impact on Supply Chain Effectiveness

- **Deploy Technology Carefully**

- Review Processes... Don't automate “the way we've always done it”
- $2 + 2 = 3$
- KISS... e.g. electronic catalogs

- **Manage Change**

BOC GASES

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Customer Solutions

Applications

Products

Delivery Process

Air Separation Process

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