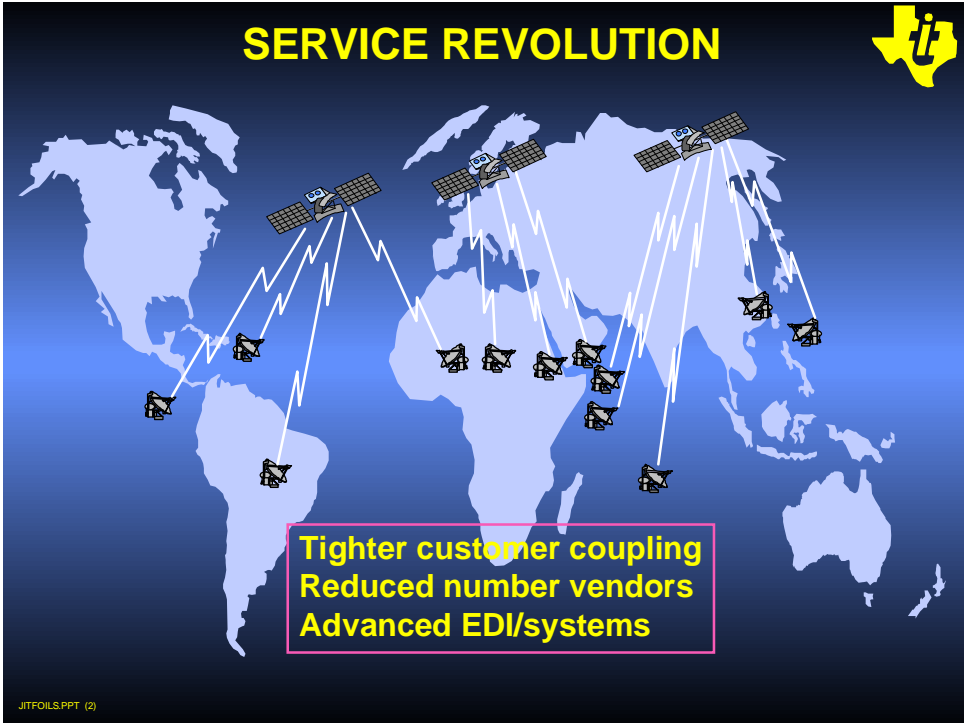


A world map with a blue-to-black gradient background. In the top right corner, there is a yellow Texas Instruments (TI) logo. The text "SEMICONDUCTOR GROUP - JIT / SMI" is centered over the map in yellow, bold, sans-serif font.

**SEMICONDUCTOR GROUP -
JIT / SMI**

JITFOILS.PPT (1)

A world map with a blue-to-black gradient background. In the top right corner, there is a yellow Texas Instruments (TI) logo. The text "SERVICE REVOLUTION" is centered at the top in yellow, bold, sans-serif font. Below the map, there are three satellite icons in the Americas, Europe, and Asia, with white lightning bolts representing communication links to various ground stations on the map. A pink-bordered box at the bottom contains yellow text.

SERVICE REVOLUTION

**Tighter customer coupling
Reduced number vendors
Advanced EDI/systems**

JITFOILS.PPT (2)

What is Electronic Data Interchange



The Electronic Exchange of Business Data
in Standardized Format*

- * ANSI X12: American National Standards Institute
- * EDIFACT: EDI for Administration, Commerce and Transport

JITFOILS.PPT (3)

CLIENT NEEDS DRIVING EDI DEVELOPMENT



- ◆ Improve cost effectiveness in business transactions
- ◆ Improve utilization of resources
- ◆ Increase productivity while reducing cycle times
- ◆ Strengthen just-in-time manufacturing support

JITFOILS.PPT (4)



EDI OBJECTIVE

To establish with our clients a cost effective electronic business relationship that has high integrity, is secure, and easy to use!

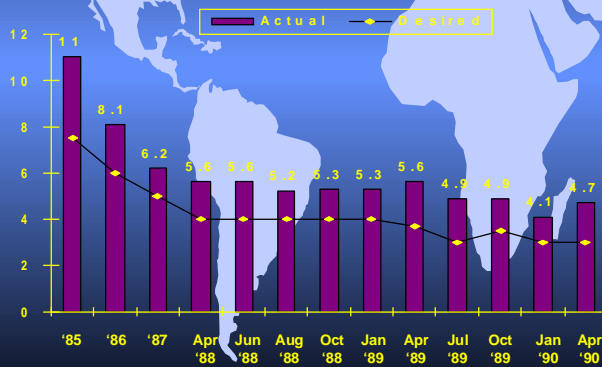
JITFOILS.PPT (5)



Service Revolution - 1980s

"Total Cost of Ownership"

SC Raw Material Inventory Trend
TI Survey (Weeks of Inventory)



- Quality/Reliability
- On-Time Delivery
- Inventory
- EDI Purchasing
- JIT

JITFOILS.PPT (6)

KEY CUSTOMER CAREABOUTS



- ◆ MINIMUM INVENTORY INVESTMENT TIED TO SHORT-TERM USAGE
- ◆ SHORT AND CONSISTENT LEADTIMES
- ◆ ABILITY TO MEET CHANGES IN DEMAND
- ◆ 100% ON-TIME DELIVERY
- ◆ ELIMINATION OF WASTE
- ◆ UNNECESSARY PAPERWORK
- ◆ MULTIPLE SOURCES
- ◆ EXPEDITES

JITFOILS.PPT (7)

Reengineering Responsiveness



- ◆ CSC/Index Survey Released March 1992
 - 465 IS Executives from Major Corporations
 - 60% actively involved in reengineering efforts
 - Majority focused on information exchange process
- ◆ Driving Force
 - 45% increase process speed/throughput
 - 16% improved service spectrum
 - 10% improved quality
 - 21% cost reduction

JITFOILS.PPT (8)

Business Driver



"This paradigm shift means that business requirements now drive the use of information technology, resulting in a greater emphasis on modeling of business process"

J.A. Fincher
EDI World, September 1993

JITFOILS.PPT (9)

Critical Mass



"The most dramatic and potentially powerful uses of information systems technology involve Inter-Organizational Systems (IOS), networks that transcend company boundaries.

These systems will significantly contribute to the enhanced productivity, flexibility and competitiveness of many companies"

Harvard Business Review
March/April 1985

JITFOILS.PPT (10)

Reengineering Relationships



- ◆ Historically Adversarial
- ◆ Paradigm Shift
 - From Coercion to Cooperation
 - From Parasitosis (other's weakness to
 - Symbiosis (other's strengths)
- ◆ Growing Body of Evidence
 - Trading partners
 - Alliances
 - Extended Enterprises
- ◆ Information Sharing is Critical

JITFOILS.PPT (11)

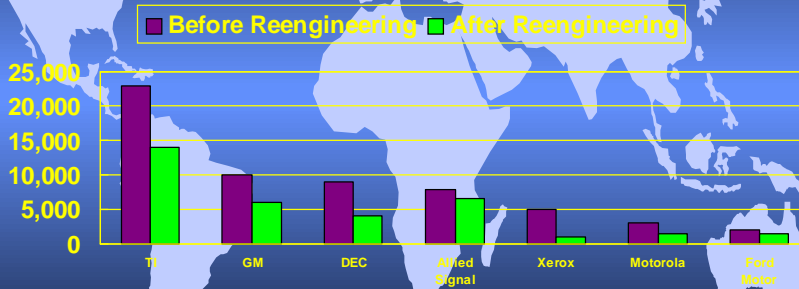
Organizational Viscosity



- ◆ Hierarchies are breaking down
- ◆ Horizontal Channels are opening up
- ◆ Virtual company
 - Flexible
 - Real-Time
 - Multi-Organizational
- ◆ Internally and externally

JITFOILS.PPT (12)

Business Reengineering Impact to Supplier Base



Source: Wall Street Journal

JITFOILS.PPT (13)

Partnership Model



- ◆ Fewer Suppliers
- ◆ Closely Coupled
- ◆ Stronger Interdependency
- ◆ Strategic Long-Run
- ◆ Key Qualifying Criteria - Electronic Trade Capability

Source: Gartner Group Study

JITFOILS.PPT (14)

JIT Philosophy



- ◆ Based on Elimination of Waste
- ◆ Shigeo Shingo's Seven Wastes
 - Waste of Overproduction
 - Waste of Waiting (time)
 - Waste of Transport
 - Waste of Stocks
 - Waste of Motion
 - Waste of Defects
 - Waste of Processing Itself

JITFOILS.PPT (15)

JIT's Waste State



- ◆ Any resource not actively involved in value added process
 - Inventory not directly in WIP
 - Inventory inspection
 - Inventory movements
 - Inventory costs
- ◆ Without continuous improvement
 - Added cost without added value
 - Constrains ability to economically respond to change

JITFOILS.PPT (16)

JIT Defined



- ◆ Materials received just in time to be consumed
 - Delivery patterns → usage rate.
- ◆ Squeeze Point - zero inventory threshold
 - Does not mean an inventory shift from customer to supplier.
- ◆ Synchronization of customers/suppliers production schedules
 - Seamless pipeline → extended enterprise virtual corporation.

JITFOILS.PPT (17)

EIDX PROPOSED BUSINESS PROCESS MODEL EMBEDDED RELEASE (JIT)



JITFOILS.PPT (18)

EIDX PROPOSED BUSINESS PROCESS MODEL MATERIAL RELEASE



EIDX PROPOSED BUSINESS PROCESS MODEL FORECAST BASED SUPPLIER MANAGED INVENTORY (SMI)



TI's JUST-IN-TIME (JIT) PROGRAM



- TI'S JIT PROGRAM IS A SEMICONDUCTOR-WIDE, LEADTIME REDUCTION PROGRAM WHICH ELIMINATES CLIENT AND TI INVENTORY STOCKING THROUGH THE USE OF AN ACCURATE SHARED ELECTRONIC FORECAST AND SHIPMENT AUTHORIZATION PROVIDED BY OUR CLIENT.

JITFOILS.PPT (21)

HOW JIT WORKS



• BASIC FEATURES:

- NO BACKLOG
- SHIPMENTS OCCUR ON A REGULAR CYCLE AS DEFINED BY CUSTOMER
- CURRENT WEEK SHIPMENTS ARE BASED ON THE LATEST FORECAST/RELEASE
- EXAMPLE BELOW REFLECTS USE OF 2ND DAY AIR AS METHOD OF SHIPMENT

DAY 1 DAY 2 DAY 3 DAY 4

FORECAST RECEIVED ELECTRONICALLY
ORDERS GENERATED ELECTRONICALLY
SHIPPING PACKET DROPS
ORDER SHIPS TO CUSTOMER
PRODUCT ARRIVES AT CUSTOMER'S DOCK
PRODUCT IN MANUFACTURING LINE

X
X
X
X

X

X

JITFOILS.PPT (22)

KEY PROGRAM ELEMENTS



- ◆ FORECAST
 - METHOD
 - TRANSMITTAL FREQUENCY
 - BUCKETS
- ◆ SHIP AUTHORIZATION
 - PO TYPE (BLANKET/DISCRETE)
 - PO GENERATION
- ◆ DEVICES
 - VARIABILITY
 - ELIGIBILITY
- ◆ FLEXIBILITY
 - UPSIDE
 - DOWNSIDE
 - FORECAST FLUCTUATION
- ◆ CONTACTS
 - BUYER
 - CLIENT SYSTEMS REP
 - FSR
 - PME
 - TI SYSTEMS REP
 - PLANNER

JITFOILS.PPT (23)

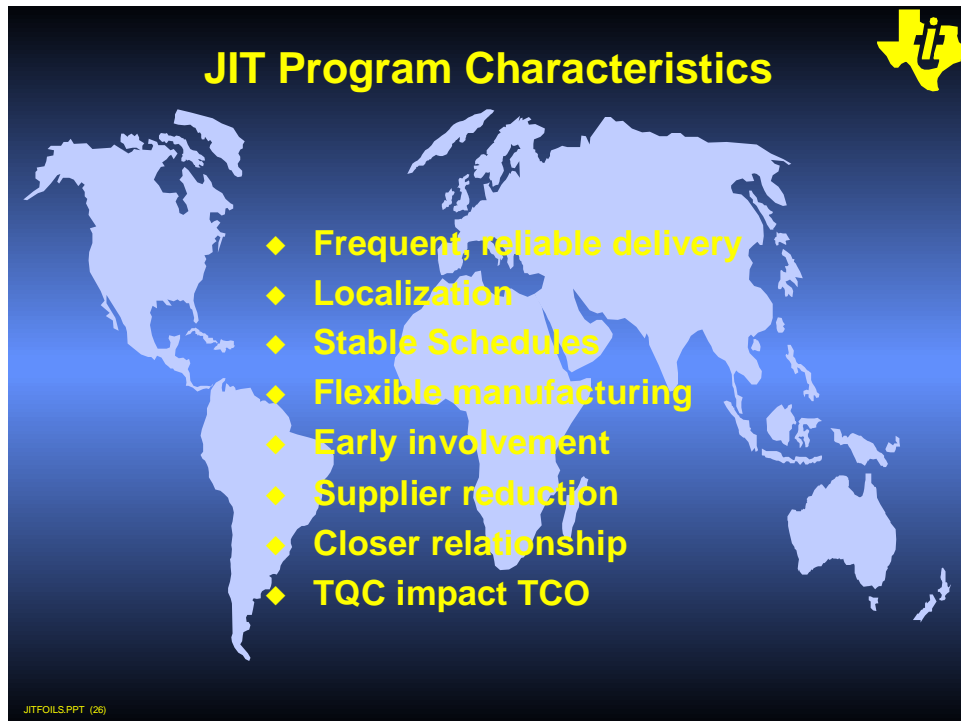
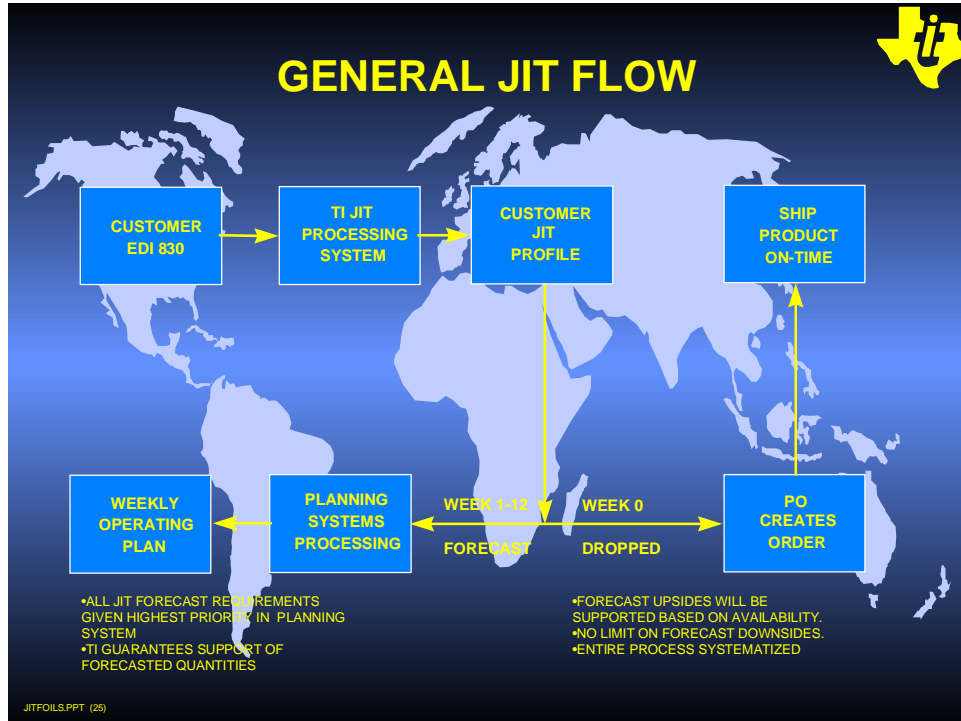
FLEXIBILITY



- ◆ Previous Week's Forecast X5
- ◆ Current Week's Forecast Y1 Y2 Y3 Y4 Y5
- ◆ Example:
 - ◆ 25% Flexibility for the sum of weeks 1 through 4
 - ◆ 10% Flexibility in week 1
 - ◆ Unlimited flexibility for forecasted devices in weeks 5 and beyond

10% PER DEVICE 25% PER DEVICE

JITFOILS.PPT (24)



CUSTOMER BENEFITS FROM TI's JIT PROGRAM

- ◆ PROGRAM ALLOWS LOWER SHELF INVENTORY ON JIT DEVICES
- ◆ ELIMINATES EXPEDITES AND CHANGE ORDERS
- ◆ SAME DAY SHIPMENT ON JIT DEVICES
- ◆ UPSIDE CAPABILITIES
- ◆ AUTOMATED EDI FORECAST PROCESSING ENSURES PRODUCT AVAILABILITY
- ◆ ELECTRONIC TRANSMISSION OF FORECASTS AND ORDERS REDUCES REQUIRED PAPERWORK

JITFOILS.PPT (27)

Time/Cost Comparisons (Based on a Major Client's Analysis)

Activity	Traditional	EDI/P.O.	JIT
App MRP Req.	5	5	
Auth Forecast			1/2
Transforecast/Auth			1/6
Rec Forecast/Auth			1/2
Print P.O.	1		
Trans P.O.		1/3	
Rec/Enter P.O.		1/2	
Rec/Rev/Sign P.O.	5		
Mail P.O.	2		
File P.O.	3		
Rec/Enter P.O.	5		
Ack Mailed	5		
Ack Transaction:			
Ack Rec/Rev		1	1/2
Ack Rec/Rev/Filed	5		
Approx Process Time	5	7	2
Approx Cost per P.O.	\$25 - \$75	\$5 - \$15	\$2 - \$5

JITFOILS.PPT (28)

PROGRAM START-UP



- ◆ DEFINE CUSTOMER REQUESTED DOCK DAY AND FREQUENCY OF SHIPMENTS
- ◆ MUTUALLY WORK CARRIER / TRANSIT TIME ISSUES
- ◆ DETERMINE AND RECEIVE ELECTRONIC FORECAST FOR MUTUALLY AGREED UPON TIME FRAMES/PERIODS
- ◆ FINALIZE PROFILE REQUIREMENTS (DEVICES, ORDER AUTHORIZATION TYPE, ETC.)
- ◆ PILOT PROGRAM FOR DEFINED PERIOD OF TIME, WORKING ISSUES AND PROBLEMS AS NECESSARY
- ◆ COOPERATIVE EFFORT TO DEFINE FULL-SCALE PROGRAM
- ◆ EXPAND PROGRAM TO INCLUDE FULL JIT DEVICE LIST

JITFOILS.PPT (29)

SMI Additional Data Elements



- ◆ Last shipment received
 - Packlist number (preferred)
 - As of date
- ◆ Min or Max inventory level
 - Will ship w/o but TI not held liable
- ◆ On hand quantity
- ◆ Past due quantity

JITFOILS.PPT (30)

SC EDI Strategy JIT/SMI Best Practices



- ◆ **Must be EDI capable!**
- ◆ **Credible and stable forecast**
- ◆ **Team approach - Supplier and Customer**
 - (Buyers, Systems, Planning, Marketing, Sales, PDCs)
- ◆ **Adherence to industry guidelines**
 - (EIDX, EDIFICE)

JITFOILS.PPT (31)

Part 1 of 3

SC EDI Strategy JIT/SMI Best Practices



- ◆ **Consistent Corporate-wide approach**
- ◆ **Controlled, mutually-defined expansion plan**
- ◆ **Use of forecast with embedded release**
- ◆ **Weekly feeds with refreshed MRP data**

JITFOILS.PPT (32)

Part 2 of 3

SC EDI Strategy JIT/SMI Best Practices



- ◆ **Two-phased production enablement**
 - Phase I: Planning system load only
 - Phase II: Shipment Authorization Release
 - Backlog synchronized with Phase II
- ◆ **Test with 4-6 high volume, low variability parts**
- ◆ **Periodic in-process reviews**

JITFOILS.PPT (33)

Part 3 of 3

PROGRAM CONTACTS



- ◆ **TI SETUP COORDINATOR**
 - YOUR LOCAL ACCOUNT FIELD SALES REPRESENTATIVE

JITFOILS.PPT (34)