

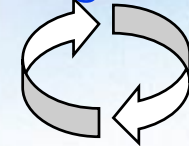
Value of Demand-Supply Network Collaboration

Case: Nokia Mobile Phones and Texas Instruments

Main Value Dimensions from Demand Supply Network Collaboration

1. Process automation
 - Including validation
2. Two way communication –
 - Automated exchange of PIPs
3. Reconciliation (synchronization)
4. Inventory control
5. Exception management
6. People

Integration



Closed Loops

Value:

Both NMP and TI can react faster and better to market fluctuation and capture market opportunities maintaining a minimum inventory level

1. Process Automation

Demand Planning full Supply Network integration from Nokia Customers to TI Suppliers:

- Full integration of Nokia/TI planning systems through exchange of information via RosettaNet PIPs, process validation, optimized allocation and exception management.

Daily Ihub Replenishment Process:

- Control of inventory through centralized process until daily replenishment orders are sent to the to ihub based on minimum level, safety stock and shipping cycle time.
- On-line inventory visibility in web-tool, call-off based on Nokia's production and daily inventory report

Fully automated Inventory and Finance processes:

- Starting with Nokia consumption, an automated self-billing invoice is used; Inventory is transferred from TI to Nokia, sales invoice is created and revenue is recognized in TI system.
- If ihub inventory goes under minimum inventory level, there will be an alert.
- Payments are linked to self-billing in both Nokia and TI system

2. Communication Automation: 100% RosettaNet PIPs

Demand Planning

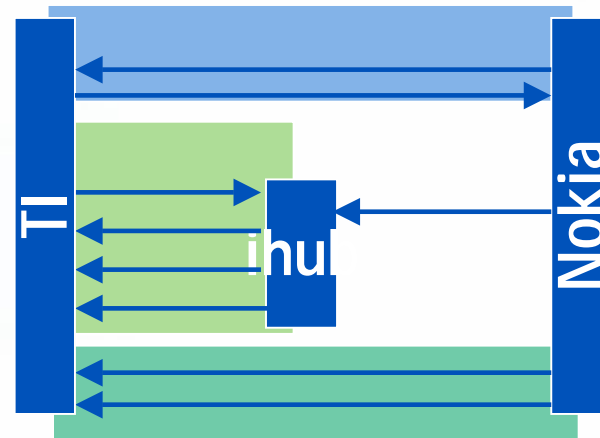
- Weekly demand forecast and supply response: PIP 4A3/4A5
- Monthly forecast and response: PIP 4A1/4A5

Demand Fulfillment

- Shipping and receiving notifications: PIP 3B2/4B2
- Call-offs and inventory snap-shot: PIP 3B2/4C1

Finance

- Self-Billing Invoice: PIP 3C7
- Remittance Advice: PIP 3C6



3. Reconciliation/Synchronization

Demand Planning

- Synchronized data: Nokia Demand & Supply and inventory, TI supply and support, Nokia and TI with Goods-in-transit calculation
- Snap-shot data, once a week
- Planning may require human validation.

Demand Fulfillment

- Transactional data – fully automated reconciliation
- Replenishment calculation based on production forecast, inventory targets (Min/Max) and current inventory (Ihub /Goods-in-transit)
- Consignment Reconciliation System (Goods-in-transit) (TI Internal)
- 3rd party warehouse systems and Nokia ERP inventory daily reconciliation

Finance

- Online, fully automated process from a Self-Billing invoice to TI invoice and Inventory adjustment.
- Fast revenue recognition
- Automated payment reconciliation with Self-Billing Invoice Number

4. Inventory Control

Inventory visibility

- Inventory visibility in the total supply network
- Ihub and goods-in-transit inventory visibility in 3rd party inventory visibility tool
- Supplier projected inventory

Inventory Targets

- No obsolete parts
- Ihub inventory successfully maintained by TI between min and max level
- Inventory in total supply chain reduced by 20% in 2002
- New challenging inventory target:
 - Reduce planning, manufacturing and logistics cycle times
 - Reduce buffer inventory: optimum min/max inventory targets depending of origin/destination combination, product and demand
 - Reduce variability and flexibility for components shared by common platforms

5. Exception Based Management

- Focus on changes (demand, supply, production site, product mix)
- Ramp up / Ramp down management process
- Alignment of Nokia and TI planning tool alerts calculation
- Built in alert management into inventory reconciliation tool

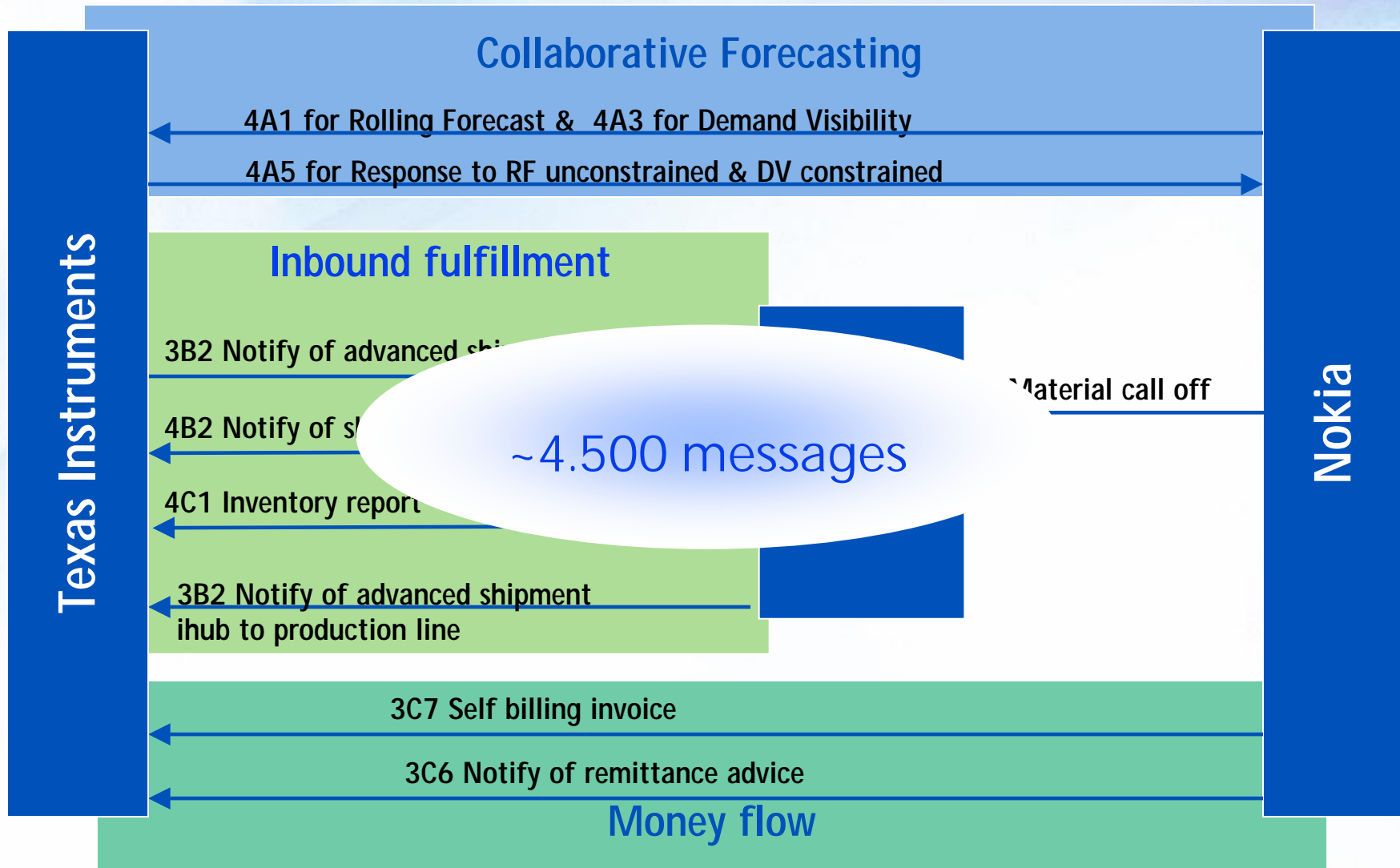
6. People

- Benchmark communication between technical fields, marketing and production and between both companies.
- Efficient Collaborative Planning team
- Good understanding, good judgment and smart decisions by trusting people who do the actual work (e.g. ramp-ups, allocation situations)
- Structured communication and support organization, people empowerment
- Share same objectives

How the Value is Actually Measured?

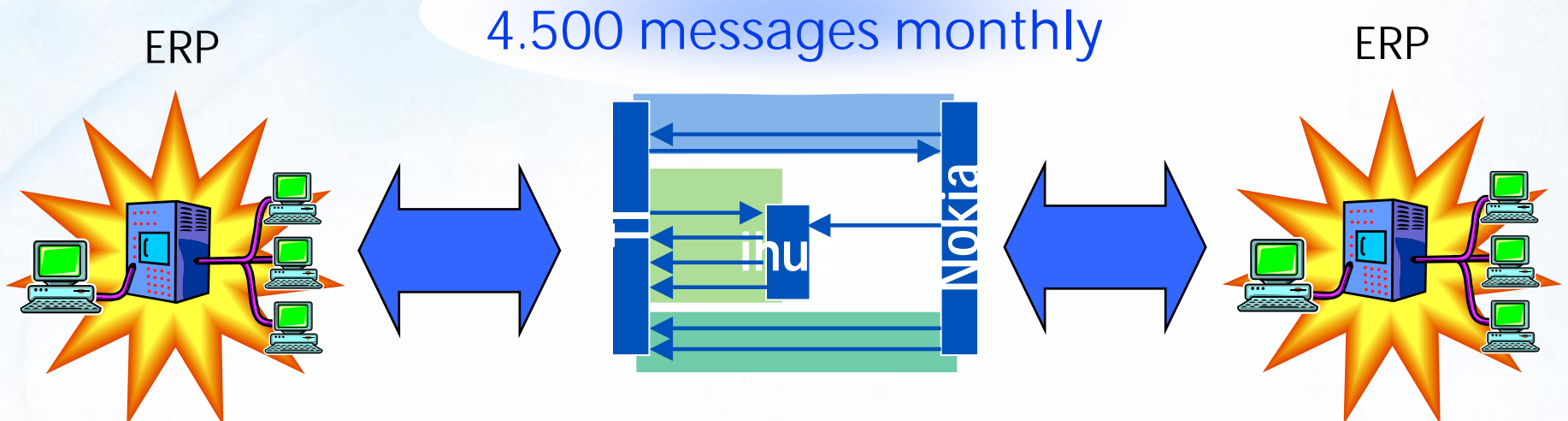
- No lost business
- Zero line stop
- Zero obsolete components
- Forecast performance
- Inventory on target between min and max
- Inventory reduction in total supply chain

Communication Automation between NMP and TI Transaction per Month – estimate 31.12.03



Communication Automation: NMP and TI transactions

Trust and respect between business partners
Automation & optimization on internal processes



Integration between the S2S-message and back-end ERP system creates the true value