The Healthcare Supply Chain in Italy:
The role of DAFNE in the enhancing of medicine provision

Dr. Stefano Novaresi
DAFNE, Vice President
Comifar Group, Group Operations Director

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## An European overview

### Dimensions of Pharmaceutical wholesaling, 2004

<table>
<thead>
<tr>
<th></th>
<th>EU-22</th>
<th>EU-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing Industry</td>
<td>3,597</td>
<td>426</td>
</tr>
<tr>
<td>Wholesale Industry</td>
<td>505,432&lt;sup&gt;1)&lt;/sup&gt;</td>
<td>65,217</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>169,633&lt;sup&gt;2)&lt;/sup&gt;</td>
<td>87,373</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>113,919&lt;sup&gt;3)&lt;/sup&gt;</td>
<td>599,867&lt;sup&gt;3)&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

1) No data for Luxembourg available; Belgium, Greece and UK values for 2001
2) No data for Luxembourg available
3) Belgium, France, UK values for 2001

### Source: EUROSTAT, GIRP data, HAPC 2005, Walter et al. 2005

1) National and regional full-lin wholesalers
2) The number of wholesalers is much higher compared to the EU-15 as in Poland alone there are about 140 wholesales companies.
3) Pharmacies, hospital pharmacies and dispensing doctors

### Source: EUROSTAT, GIRP data, IPF research
The EU wholesaling network

Source: GIRP, 2004
The Italian Pharma Supply Chain

Manufacturers
> 300

Pre-Wholesalers
and concessionaires
180

Wholesalers warehouses
260

Pharmacies
16,700
ASL and Hospitals
1,300 public
1,000 private
Rx flow in Italy

Manufacturers
100%

Pre-Wholesalers
69-73%

Wholesalers
76-80%

Pharmacies
84%

ASL/Hospitals
16%

2%

Patients
100%

Source: DAFNE
DAFNE Consortium

Distributione (Distribution)
Aziende (Companies)
Farmaceutiche (Pharmaceutical)
Network
EDI

Founder Companies July -1991
BOEHRINGER ING. - BOEHRINGER MAN.- CIBA - FIDIA - GLAXO - ICI

Starting orders transmission - 1993

N° 11 Pharmaceutical Companies ............... 19,13% Market share
N° 29 Distribution Companies ............... 41,35% Market share
It’s a Consortium between Pharmaceutical Companies and Wholesalers, that aims to involve the pharmaceutical partners through the development of electronic connections with international standard (EDI) and Internet.
Mission: further development

... AN OPERATIVE COMMUNITY “B2B” WHERE
FINDING MUTUAL SYNERGIES,
DEVELOPING IDEAS AND CONCRETE PROJECTS,
WORKING TOGETHER FOR AN EFFECTIVE
COLLABORATION
WITH ALL THE “PLAYERS” OF
THE PHARMACEUTICAL SUPPLY CHAIN
DAFNE

0% Incidenza dell’eSupply Chain sul transato B2b 100%

N.B.: la superficie dei cerchi è proporzionale al valore dell’eCommerce B2b in area Supply Chain.

Politecnico di Milano
B2B Observatory, III Report 2004
Governance

MEMBERS ASSEMBLY

President: Dr R. Caloni
Vice President: Dr S. Novaresi
BOARD OF DIRECTORS
(6 PH. Manufactures + 6 Wholesalers)

• Technical Committee
  • Logistics Team
  • Administrative Team

PROJECTS TEAMWORKS

Logistics:
• Order
• Order Confirmation
• Order Tracking
• Collaborative Logistics

“EASY DAFNE”

ELETRONIC INVOICE

HOSPITAL ORDERS
## DAFNE Consortium (end ’05)

<table>
<thead>
<tr>
<th>Manufactures</th>
<th>Market Share</th>
<th>Wholesalers</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95% (56% + 39%)</td>
<td></td>
<td>99% (67% + 32%)</td>
</tr>
</tbody>
</table>

### 38 Pharmaceutical Companies

- Abbott
- ABC Farmaceutici
- Allergan
- Amgen
- Angelini
- Astra Zeneca
- Baxter
- Bayer
- Beiersdorf
- Biofotura Pharma
- Boehringer Ingel.
- Boots Healt C.
- Bracco
- Bristol M.S
- Chiesi
- Co.Di.Fi
- Cosmetique Active
- Eli Lilly
- Fidia
- Glaxosmithkline
- Inneov
- Lab. Boiron
- Novartis
- Plada
- Pfizer
- Pierre Fabre
- Promefarm
- Recordati
- Roche
- Rottapharm
- Sandoz
- Sanofi-Aventis
- Schering
- Schering Plough
- Skill in F.
- Sigma Tau
- Simesa
- Teva Pharma
- Alleanza Salute It.
- Al-Pharma
- Antica Farm. Mod.
- C.E.F.
- Chifar
- Co.Fa.Ro.
- Comifar Group
- Co.Si.Far
- Cotifa
- Farmacentro
- Difar
- Farcopa
- Farmaca Cannone
- Farmauno
- Farvima
- Galenitalia
- Galeno
- Grossfarma
- Guacci
- Jorio
- Lemarfarma
- Nord Est Farma
- Nuova Safarm
- Riccobono
- Sofarmamorra
- Unico
- Unifarm
- Unifarma
- Unione Far. Friuli
- V.I.M.

### 120 Wholesalers

- Pharma Logistics
- Chiapparoli
- Fiege Goth
- Dimaf
- Pieve Ferlito
- Profarco
- Jacopetti
- Neologistica
- Sirdeco
- Phardis
- Sitra Nord
- Novasorel
- Cabassi & Giurati
- Profarma
- Columbus

### DAFNE’s USERS

- 16 Deposits
- Extranet
- 120 Wholesalers
Documents exchange and order tracking

- **Order**: information regarding the order dispatched to Manufacturers/Pre-Wholesalers
- **Order confirmation**: after control regarding credit, solvency, and products availability, possible response to Wholesaler: envied; received; suspended; refused; elaborated and delivered completely or partially on lines rather than on amounts
- **Delivery note**: information regarding batch number, expiry date, number of boxes, pallet, etc.
- **Summary note (bordereau)**: includes all delivery notes from the same Deposit
- **Received goods note**: information on delivery time and quality of transport (e.g., Controlled Temperature)
- **Control goods note**: information about the right number of units and items, conditions of products, packing, etc.
- **Electronic invoice**: electronic transmission of the invoice and standard format DAFNE printable document. (Electronic invoice in progress)

Dr. Stefano Novaresi
Global Healthcare User Group (GS1 HUG™), Rome, March 22nd 2006
DAFNE information channels

The service offered centrally for all the customers provide the translation into **EDI standard** documents and vice versa.

The information exchange according to international standards has been realized throughout a technological infrastructure that uses the **post office boxes technique**: documents sent are enveloped leaving only the sender and the receiver addresses visible. A service provider capture the messages from the mail boxes and deliver them.
A new partner: the HOSPITAL

The development of electronic connections is creating efficiency and partnership opportunities also with ASL and Hospitals.

65% of the hospital market share
Involvement of the Professional Associations

Pharmaceutical Companies members of Project “Dafne Hospitals” have involved:

<table>
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<th>Association</th>
<th>Description</th>
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<tbody>
<tr>
<td>FARMINDUSTRIA</td>
<td>Association of Pharmaceutical Manufactures</td>
</tr>
<tr>
<td>SIFO</td>
<td>Association of hospital chemists</td>
</tr>
<tr>
<td>FARE</td>
<td>Association of hospital treasurers</td>
</tr>
<tr>
<td>FIASO</td>
<td>Association of hospital general managers</td>
</tr>
</tbody>
</table>

The goal is

**TO ACT IN AGREEMENT**
Hospital Project: Target 2006

> 100 ASL/AO Connected
> 25 Pharmaceutical Companies Involved

Documents:

- Order
- Order Confirmation
- Electronic Invoice
- Tracking

The collaboration in the Pharma Supply Chain and the DAFNE experience in the de-materialization of orders and invoices

DAFNE electronic invoice teamwork is running to the admission of DAFNE standard as official document valid for tax purposes and electronic registration - D.R.P. 10.11.97 N° 513 (G.U. 13.3.98)
THE NEW SCENARIOUS IN THE PHARMACEUTICAL SUPPLY CHAIN, Milan, **November 30**th **2004**. At the event organised jointly with SDA Bocconi took part also AIFA, EAN International European Healthcare Initiative, Auto –ID Center, Farmindustria, Assoram, ADF, Federfarma Servizi

THE NEW SCENARIOUS IN THE PHARMACEUTICAL SUPPLY CHAIN, Milan, **December 1**st **2005**. At the event organised jointly with SDA Bocconi took part also CERGAS, IMD Business School, GS1 Europe: European Healthcare Initiative, Assoram, ADF, Federfarma Servizi
Dr. Stefano Novaresi
Global Healthcare User Group (GS1 HUG™), Rome, March 22nd 2006
DAFNE Collaborative Logistics

Flows and channels standardization
Physical item identification
DAFNE Collaborative Logistics

PHARMA SUPPLY CHAIN, DAFNE proposals for a Collaborative Logistics, Rome
March 19th 2004

at the initiative took part also Politecnico di Milano, SDA Bocconi, EAN International European Healthcare Initiative, GIRP, Farmindustria, Assoram, ADF, Federfarma Servizi
Basic assumption: the first step towards any improvement of products and information flows is to enable a fast and accurate Automatic Data Capture.

It is necessary to define the data requirements along the supply chain (such as: product identification, batch number, expiry date), including any need for individual item identification.

Having done that, the best technology can be selected to carry/symbolize that data.

In 2002 GIRP Technical Committee promoted an **European survey** on packaging and labelling

**Information rank**: the 10 fastest moving products of
- AstraZeneca, Aventis, Bayer, Boehringer Ingelheim, GSK, Janssen Cilag, Lilly, Merck S.D, Novartis, Pfizer, Pharmacia, Roche, Sanofi Synthelabo, Wyeth

**Label headings**
- Product Name, Description, Dosing, Pieces/box, Manufacturer, Manufacturer Internal Code, Batch Number, Production date, Expiry Date, Packaging Number, Product Code, Others

**Package**
- patient package
- case
- pallet
GIRP : Technical committee survey output
Wholesalers perspective

**Patient package**
- no harmonisation in the information reported
- no standard in the technology used to label or print the package
- no Automatic Data Capture possible in the identification of goods (i.e. information are not bar-coded)

**Case labelling**
- very wide variability of the information reported
- very wide range of technologies used to label or print the case package (laser/ink printing on the box, labelling - O.C.R., bar-coding, …)
- no Automatic Data Capture possible in the identification of goods (i.e. when barcode is used, there is no standard)

**Pallet labelling**
- often pallet is not considered a delivery unit, consequently is not identified (the object of transport is groupage of cases)
Collaborative Logistics aims to

- **Harmonize** information exchanged between Manufacturers and Pre-Wholesalers.

- **Define the common standard!**

- **Simplify** the relation Many2One and One2Many typical of the Pre-Wholesaling logistics knot.

- **Simplify the network!**

- **Synchronize** reliable information available in real time for all the players of the supply chain.

- **Better stock management!**
DAFNE Collaborative Logistics
Flows and channels standardization

**Electronic & Paper Documents**: standardization of format and information
i.e. Order confirmation-delivery note-bordereau-waybill

**Pre-Wholesaler**

**Wholesaler**

**Manufacturer**

**Logistic carrier**

DAFNE

**Physical**

Order confirm.

Order

Delivery note

Bordereau

Order
DAFNE Collaborative Logistics
Physical item identification

PHYSICAL IDENTIFICATION

Main targets

Keep the actual information supporting both Pre-Wholesalers and Logistic Carrier processes

Sustainability, considering IT-TECHNOLOGY constraints of all the players involved

Encode all the basic useful information for all the Supply Chain players

Standard format and content for an easier information management

Information barcoding for Automatic Data Capture and IT processing
This step by step approach helps to understand the practical impacts and to develop a cost/benefit model for the following step of diffusion.

DAFNE approach is considering also a plug and play “KIT” able to emulate the information flows and the labels and paper documents print.
Conclusions

- Low Investments through the maintenance of in house solutions
- Easy, safe & secure, flexible technological solutions services
- Transmission costs minimization

- Order tracking
- Quality improvement by errors reduction
- Global service level evidence
- Service Level improvement
- Real time information exchange
- Sensible economic savings
Concrete collaborations along Supply Chains, that catch the strategic advantages of sharing and improving common processes, are not common.

DAFNE Consortium has a particular value in this landscape: in spite technologies hold a facilitating role, a real informative integration can’t be measured only with executive data transmissions.

Should be intended as opportunity for a managerial growth, with benefits for all its players and for the final Customer, in the specific of pharmaceutical supply chain with important social and ethics commitment.
Thank You for your attention!

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