



# The Hong Kong Hospital Authority and GS1 Hong Kong advice: How to start implementation of standards in hospitals?


**KC Leung**  
**Assistant Training Manager**



**Optimizing business, creating value**

[www.gs1hk.org](http://www.gs1hk.org)



A photograph of a warehouse interior. A yellow and white forklift is in the foreground, carrying a wooden pallet stacked with several large, tan-colored cardboard boxes. The forklift operator is visible in the driver's seat. In the background, there are large metal storage containers and a red wall. The image has a halftone or dithered texture.

>700 drug deliveries  
by GS1 standards  
to all public hospitals  
every day

Attribution: GS1 Online



Advice From GS1 HK:

**What do you need to do to  
implement standards?**

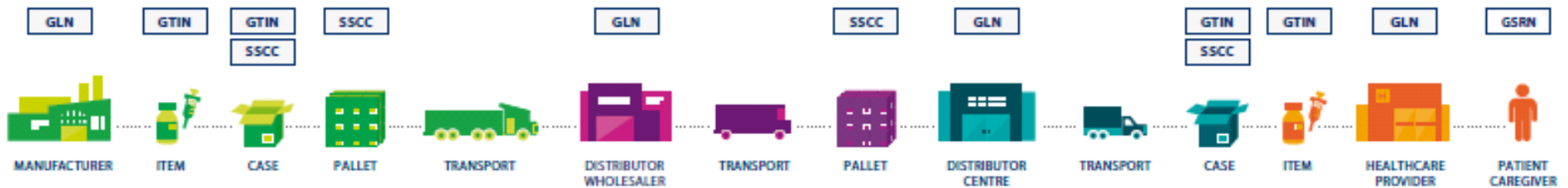
Advice #1:  
Involve GS1 to solve your  
supply chain problems in the  
beginning



# Global supply chain standards and best practices ready for you

## IDENTIFY: GS1 Standards for Identification

**GLN** Global Location Number    **GTIN**® Global Trade Item Number    **SSCC** Serial Shipping Container Code    **GSRN** Global Service Relation Number



## CAPTURE: GS1 Standards for Automatic Identification & Data Capture

### GS1 BARCODES

EAN/UPC



GS1-128



ITF-14



GS1 DataBar



GS1 DataMatrix



### GS1 EPC/RFID

EPC HF Passive

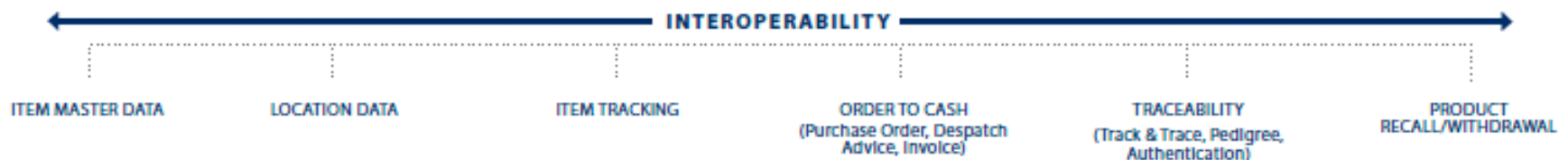


EPC UHF Passive

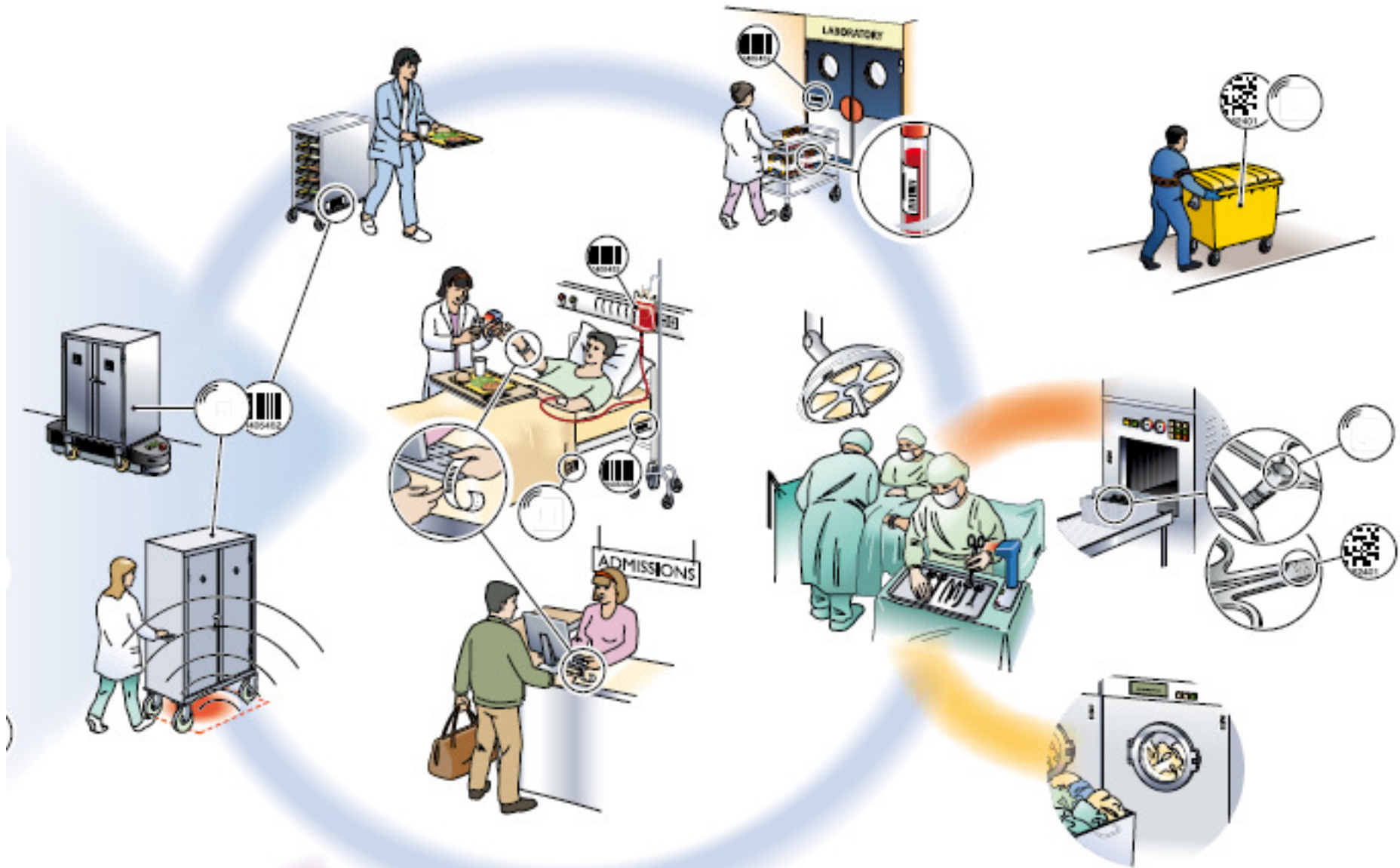


## SHARE: GS1 Standards for Automated Data Exchange

**MASTER DATA** GLN Registry for Healthcare®, Global Data Synchronization Network™ (GDSN®)    **TRANSACTIONAL DATA** eCom (EDI)    **EVENT DATA** EPC Information Services (EPCIS)

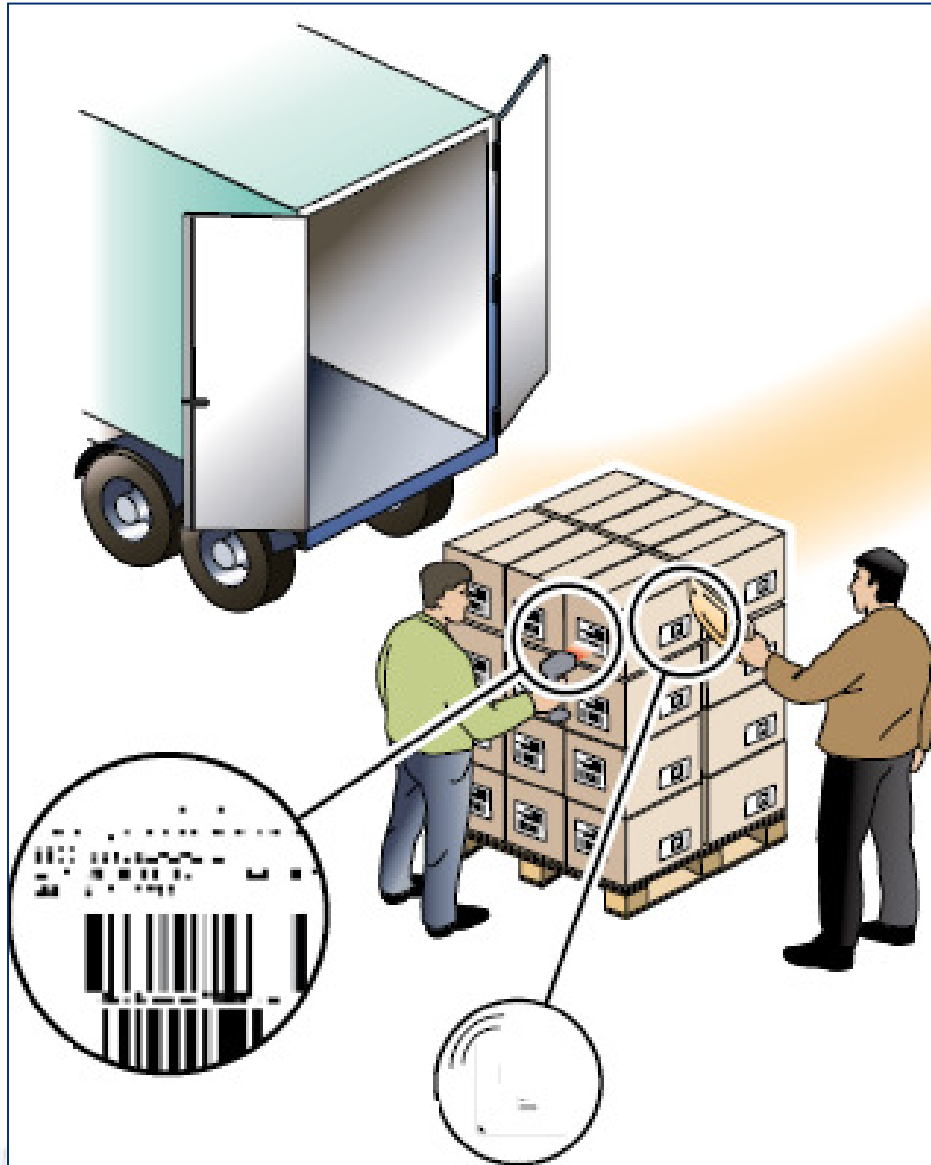


# Traceability, Patient Safety....



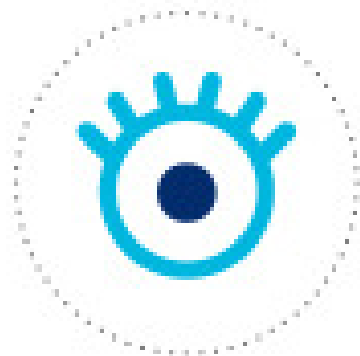
Healthcare Delivery ↑

# Operation Efficiency



## 3 elements at the core

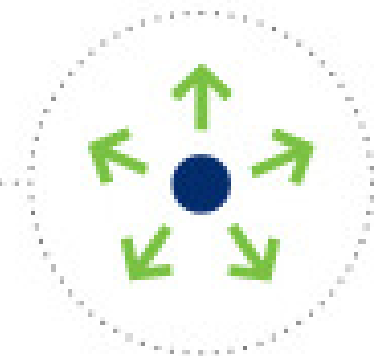
### GS1 STANDARDS AND SOLUTIONS



IDENTIFY



CAPTURE



SHARE



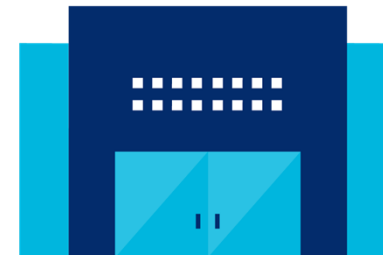


# Identify

Product ID

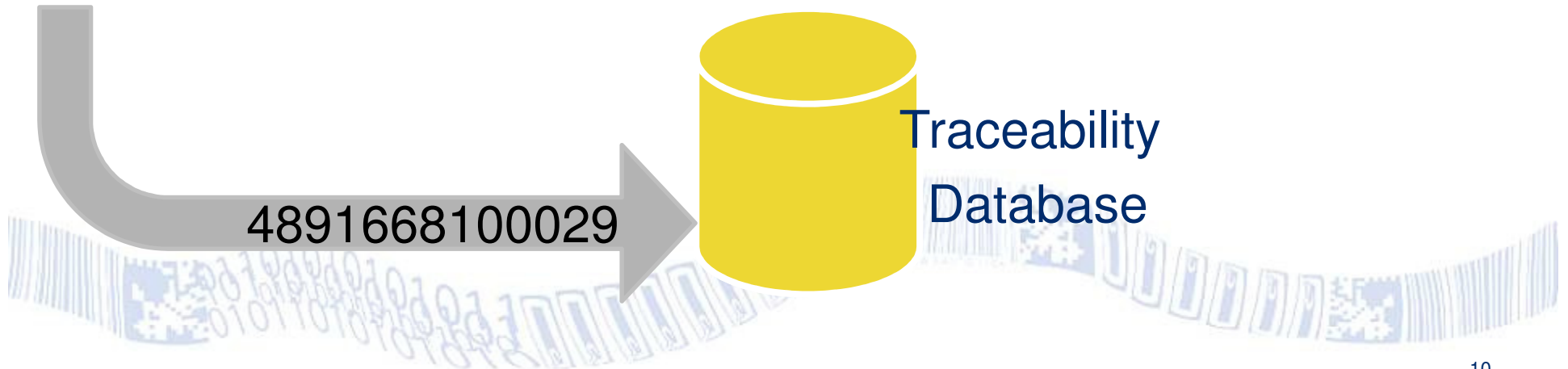


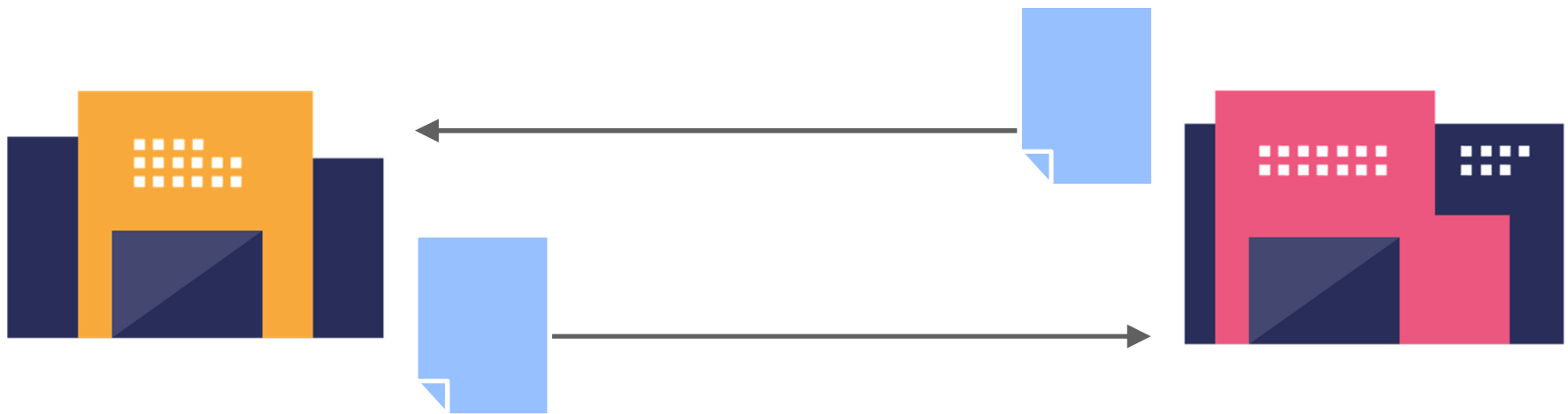
Location ID





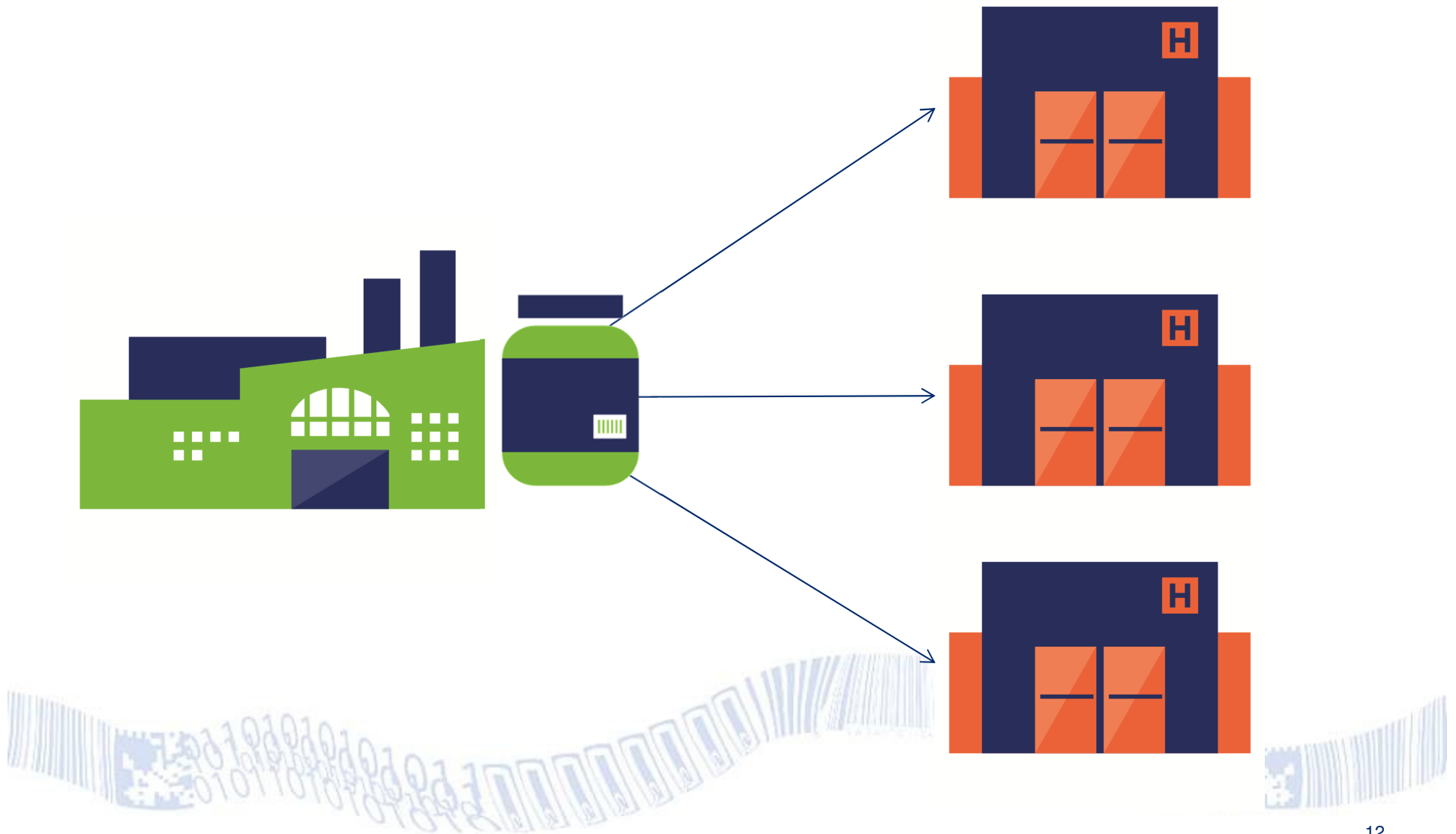
# Capture



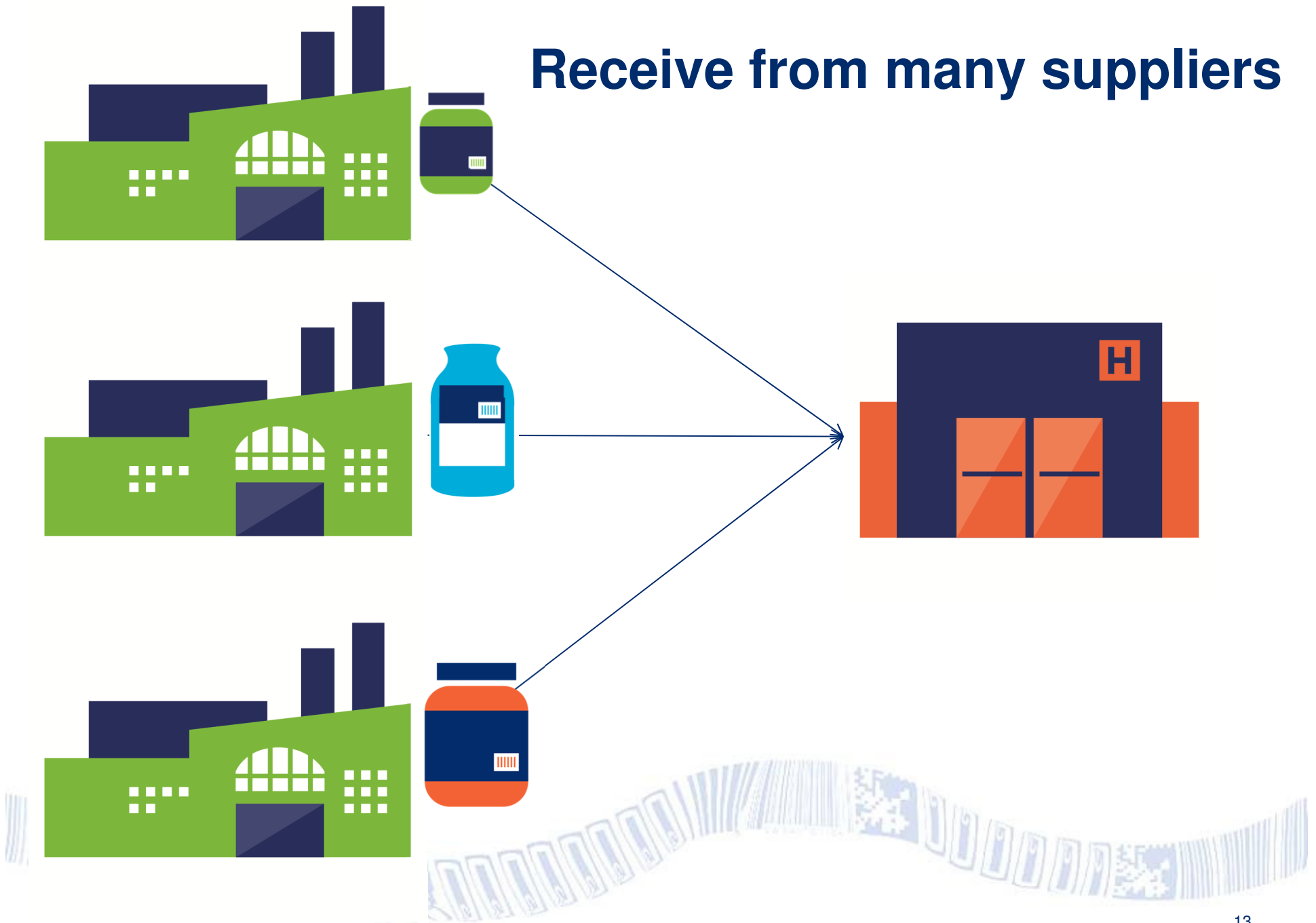




# Sell to many hospitals



# Receive from many suppliers





<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>Název/land</b> U.E.</p> <p><b>Árnyékváltozat</b></p> <p></p> <p>NL 022380</p>	<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>France</b></p> <p>Médicament autorisé en France (régulation) Principes actifs et/ou substances auxiliaires autorisées en France</p> <p><b>Substance</b> Principes actifs et/ou substances auxiliaires autorisées en France</p>	<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>Țară A. Starea de regim</b></p> <p></p> <p>7420956481351</p>	<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>Divizia</b></p> <p>H</p> <p></p> <p>7420956481351</p> <p><b>Elődok</b> alvo vagy köznevelési kódjel</p>	<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>Aula</b></p> <p>Prețul de publicat: € 421,51 Clasă C - C07 Virata în moneda de publicat:</p> <p></p> <p>42044 AR 09602110</p> <p><b>Magyarország</b> 51</p>	<p><b>Pedea 5 mg/ml</b></p> <p></p> <p><b>Publia</b></p> <p>La</p> <p></p> <p>42044 AR 09602110</p> <p><b>Numéro</b> Se afișează cu fața de prescripție medicală autorizată - 5</p>
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1031605 10-2010

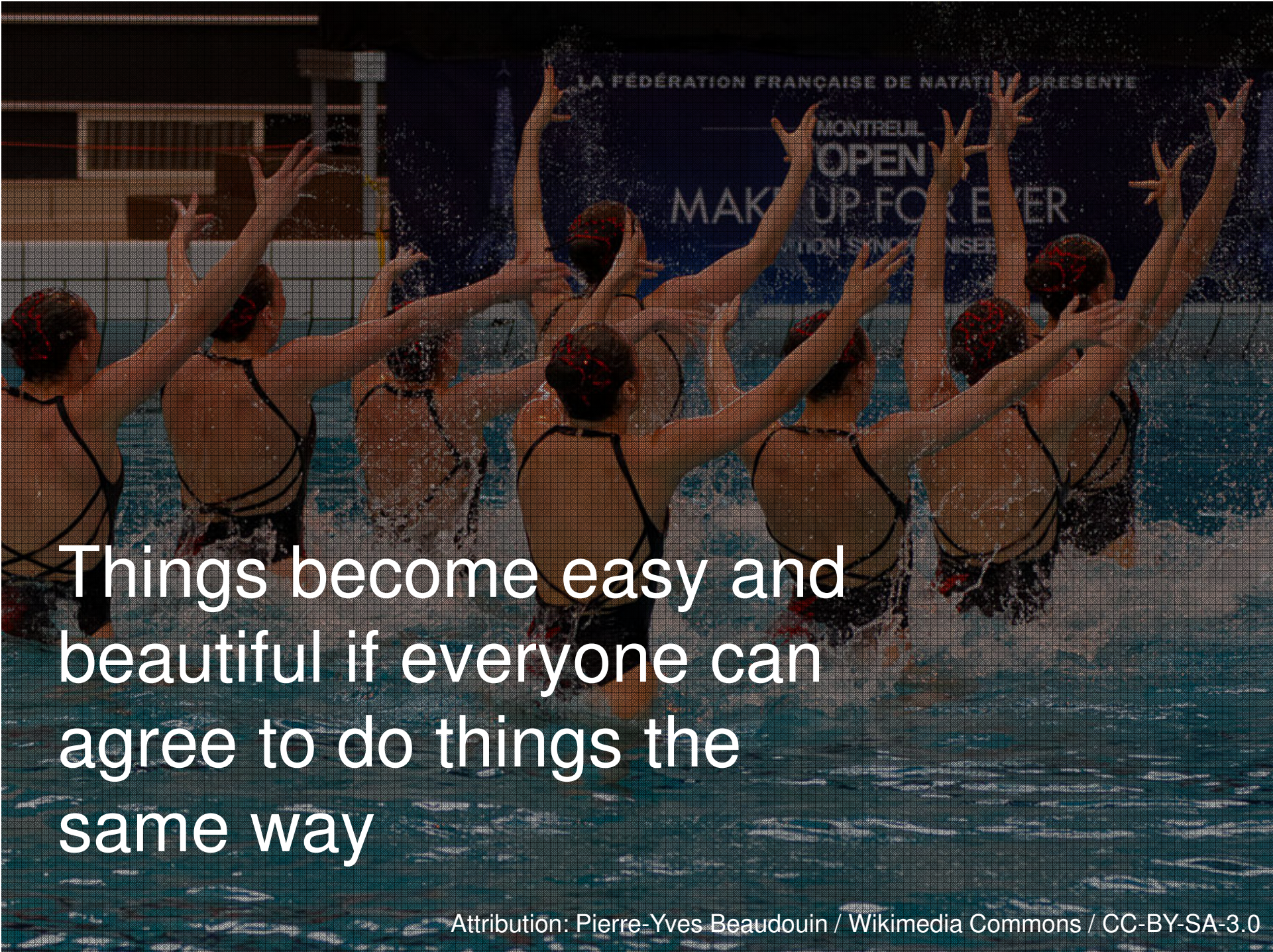
1031605 10-2010

1031605 10-2010

1031605 10-2010

1031605 10-2010





Things become easy and beautiful if everyone can agree to do things the same way



# 2012 Report McKinsey & Company



Available at:

<http://www.gs1.org/healthcare/mckinsey>



Source: <http://www.mckinsey.com>

“Implementing global standards across the entire healthcare supply chain  
could **save 22,000-43,000 lives**  
and avert 0.7 million to 1.4 million patient disabilities”

SOURCE: McKinsey report, “Strength in unity: The promise of global standards in healthcare”, October 2012



# Every stakeholder will benefit from adopting a single global standard



**4-25 x**

**10-15 x**

**3 x**

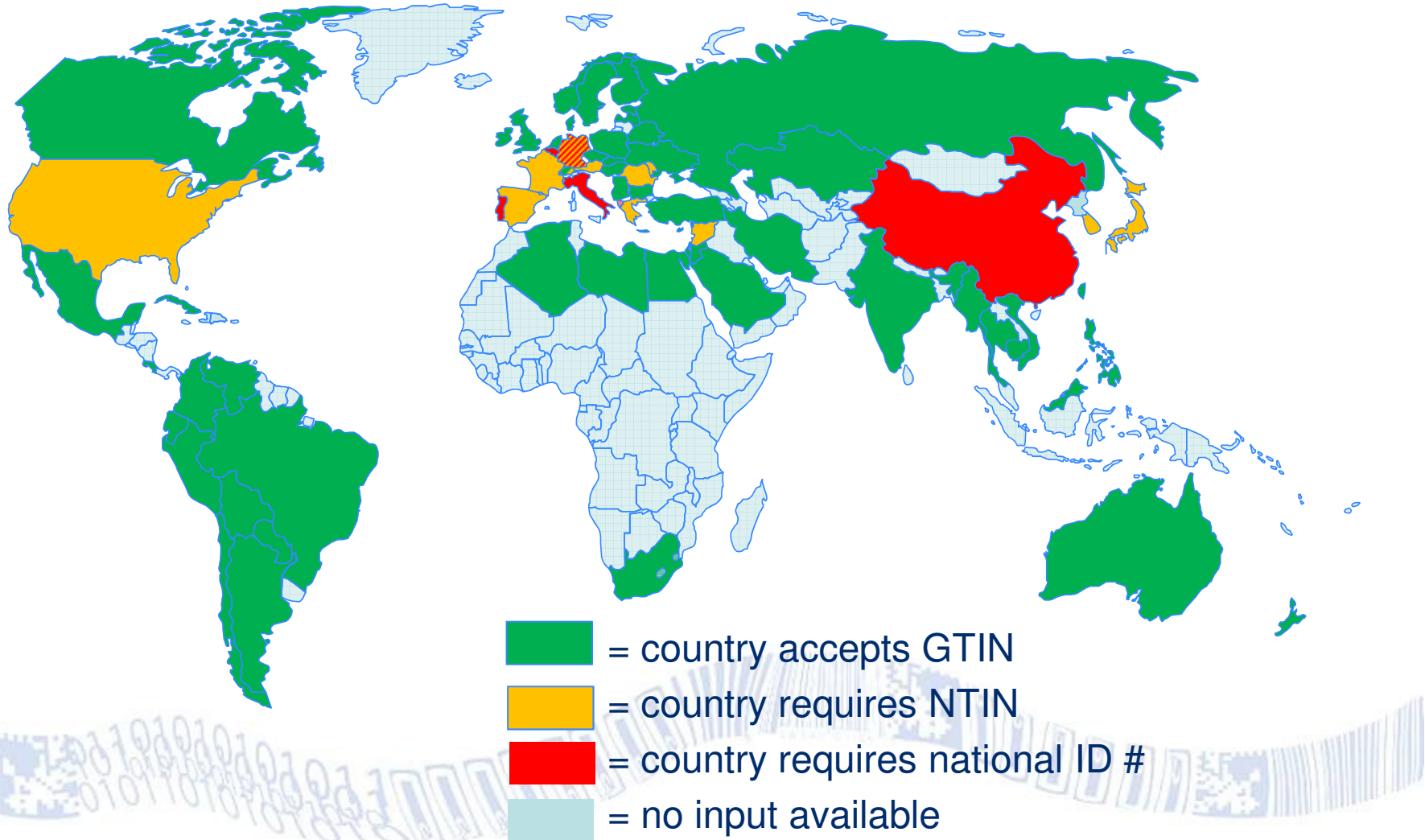
**3-20 x**

**ROI**

SOURCE: McKinsey report, "Strength in unity: The promise of global standards in healthcare", October 2012



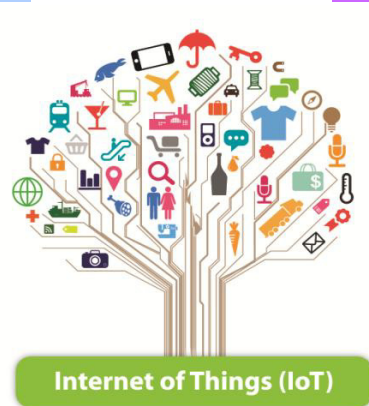
# Many countries are using Global Trade Item Number for pharmaceuticals



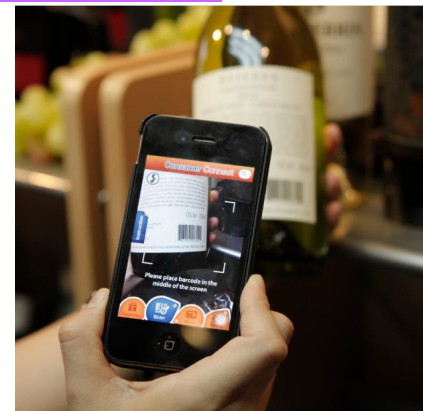
# Locally in HK, supply chain solutions ready for our community



**B2B**



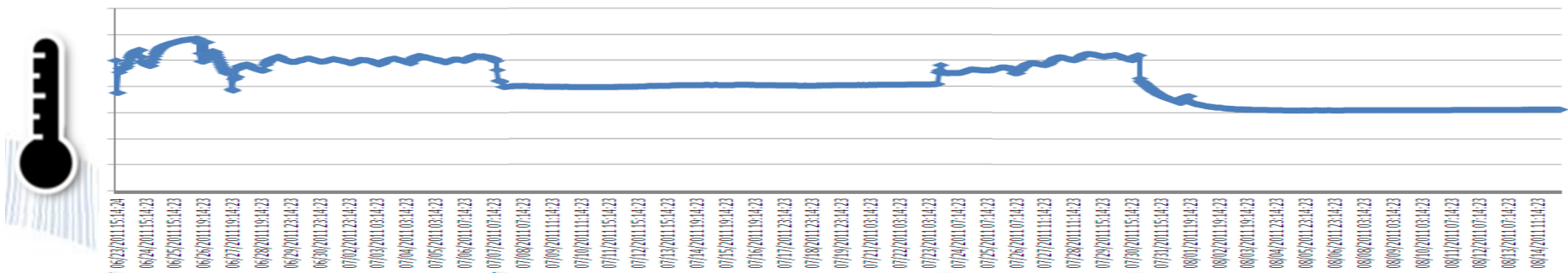
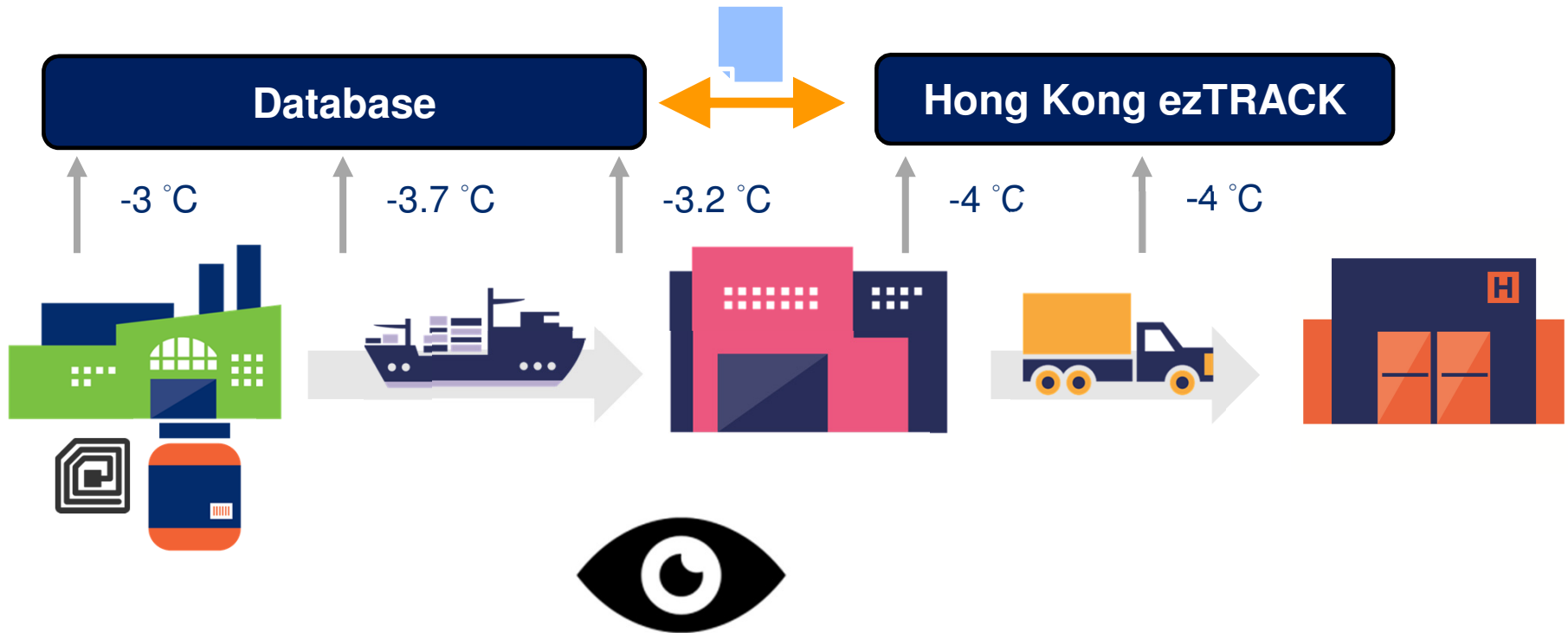
**IoT**



**B2C**

# Example: Quality Assurance by Cold Chain

Share location & temperature

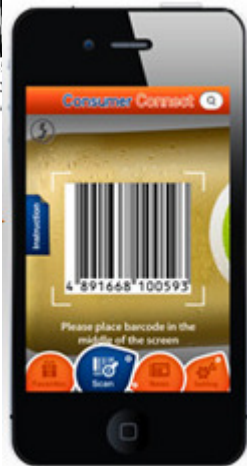






# Example: Consumer Convenience By Consumer Connect

## OTC Drugs



## Scan



## Information



## Location

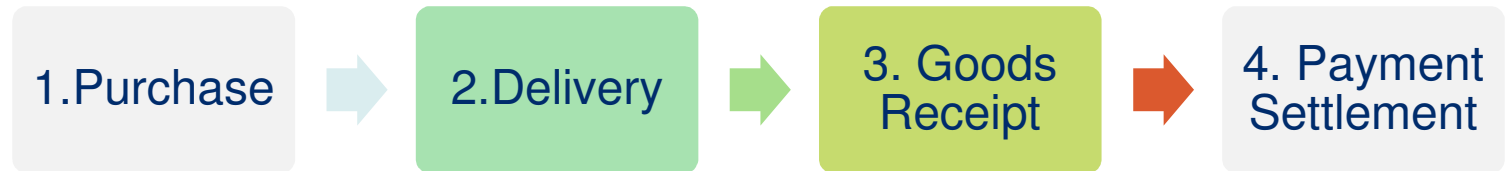


Hospital Authority:  
Many manual inspection and  
data entry in warehouses

With GS1 Standards and solutions, it's possible to:

1. Check the drugs information in advance automatically;
2. Automate the data entry;
3. Automate track and trace of the drugs.

# GS1's Analysis



Identify drugs	✓	✓	✓	✓
Identify locations	✓	✓	✓	✓
Identify pallet		✓	✓	
Replace manual operation			✓	
Replace manual transaction	✓	✓	✓	✓





## GS1's Recommendation

Global Trade  
Item Number



Serial Shipping  
Container Code



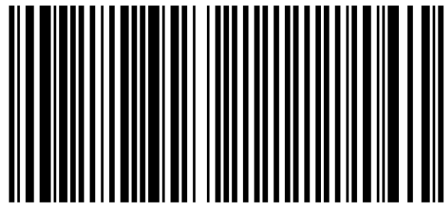
# GS1's Recommendation

From: ABC Pharma  
17 Tai Ming Road,  
Kwun Tong, Kln, HK

To: Pamela Youde Nethersole Eastern Hospital  
3 Lok Man Road,  
Chai Wan, HK

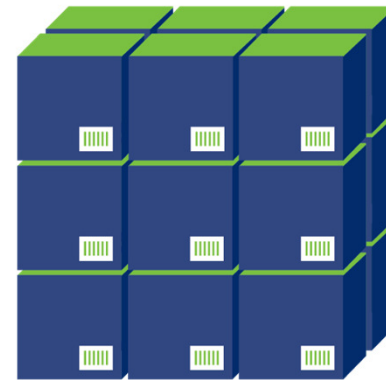
SSCC

148916680000000012



(00) 1 4891668 00000001 2

## GS1-128 Bar Code



# GS1's Recommendation

Global  
Location  
Number



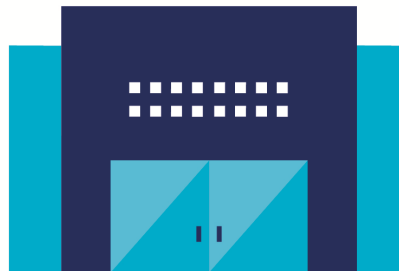
41 Hospitals



Suppliers

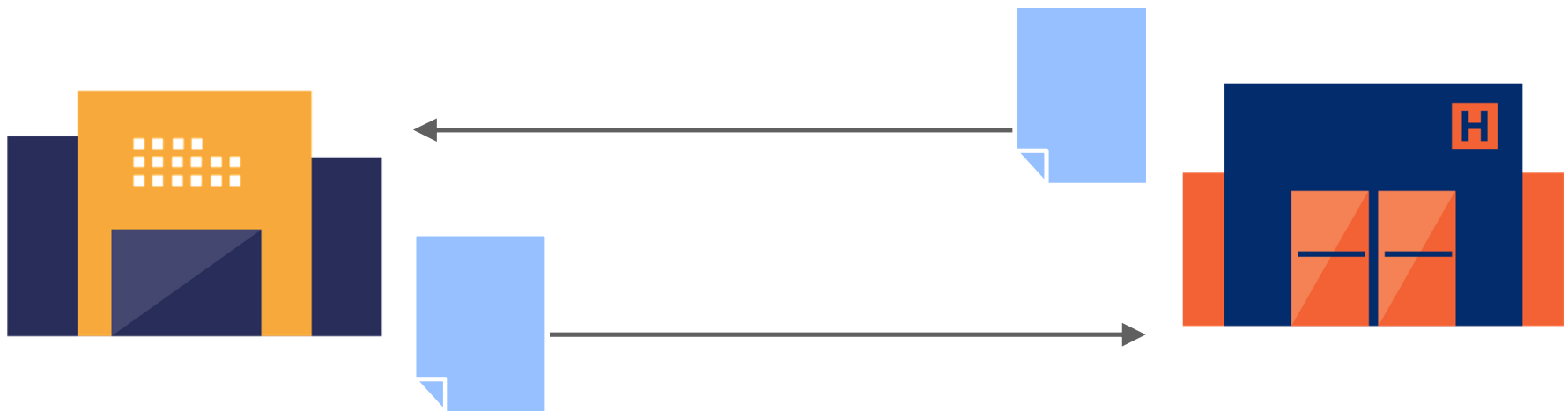


Hospital  
Finance Departments Hospitals  
Delivery Location at



# GS1's Recommendation

Electronic Purchase Order



Electronic

1. Purchase Order Response
2. Advance Shipment Notice
3. Invoice

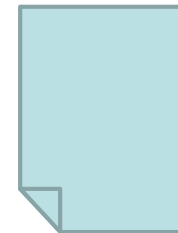


## GS1's Recommendation

24 hrs before delivery



Electronic Advance  
Shipment Notice





# EDI Advance Shipping Notices

DESPATCH ADVICE HEADER INFORMATION (ASN) \*\* = Field Errors

Despatch Advice (ASN) No. ASN6210012219A  
Document Type DESPATCH ADVICE

**Date of Delivery**

**DATE**

Date Type DOCUMENT/MESSAGE DATE/TIME **Date** 2013/05/07 (CCYY/MM/DD)  
Date Type DESPATCH DATE AND OR TIME **Date** 2013/05/07 (CCYY/MM/DD)

**REFERENCE**

Reference Qualifier DESPATCH NOTE NUMBER  
Reference ASN6210012219A

**NAME AND LOCATION**

**Ship From / To Party**

Shipper GLN	GLN Address
4891668000008	N/A
Delivery GLN	GLN Address
4895063306567	AH0-CB-B1-MAIN PHARMACY B1/F, BLOCK C, ... <a href="#">Read more</a>
Buyer GLN	GLN Address
4895063300015	
Supplier GLN	GLN Address
4891668000008	

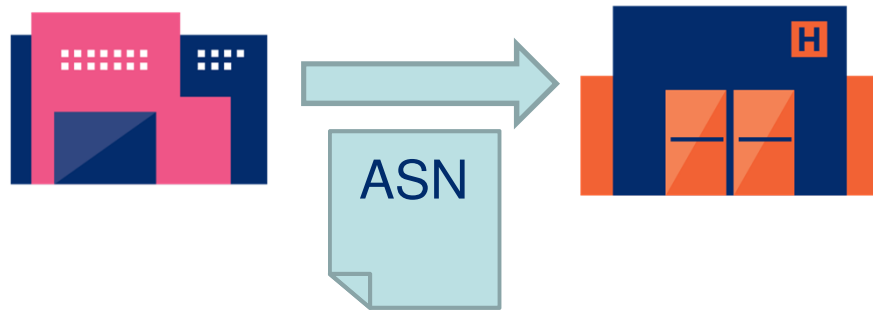
**DESPATCH ADVICE DETAIL (ASN)**

SSCC 048916682232322231

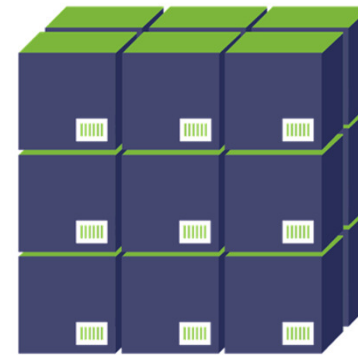
#	GTIN	Item Code	PO Line No.	COO	Serial#
1	771313002790		1	CA	
<b>GTIN Description</b>		N/A			
2	771313077842		2	CA	
<b>GTIN Description</b>		N/A			

**SSCC, GTIN, Country of Origin, Expiration Date, and Batch no...**

### 1. Pre-validation



### 2. Goods arrival at warehouse



### 3. Scan the SSCC bar code



### 4. Confirm receipt & update inventory record automatically

GTIN	Qty	Batch No.
489166810002 9	0-2	ABC
489166810003 7	0-1	DEF



”...If as one people **speaking the same language** they have begun to do this, **then nothing they plan to do will be impossible** for them...”

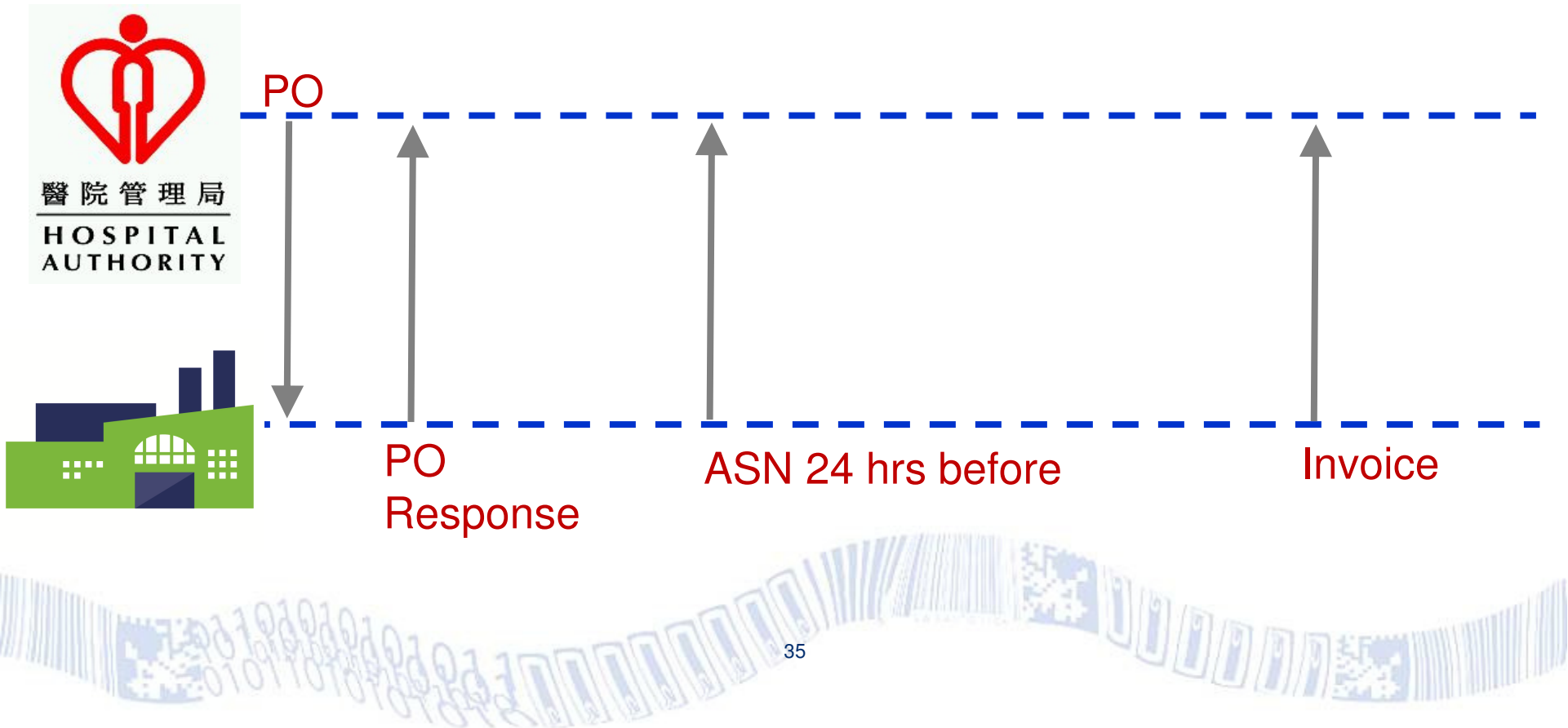
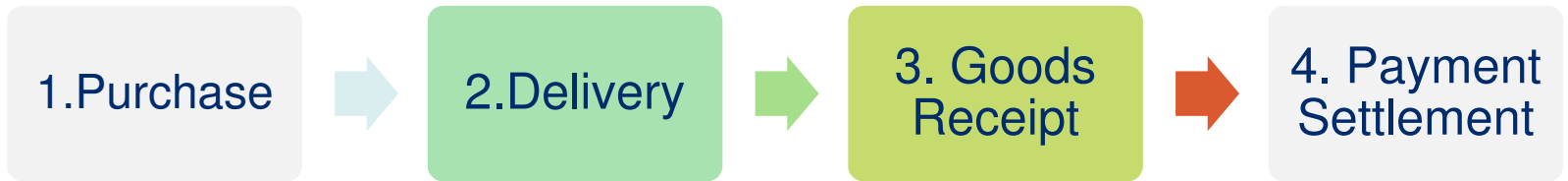
Genesis 11:1-9

Advice #2:

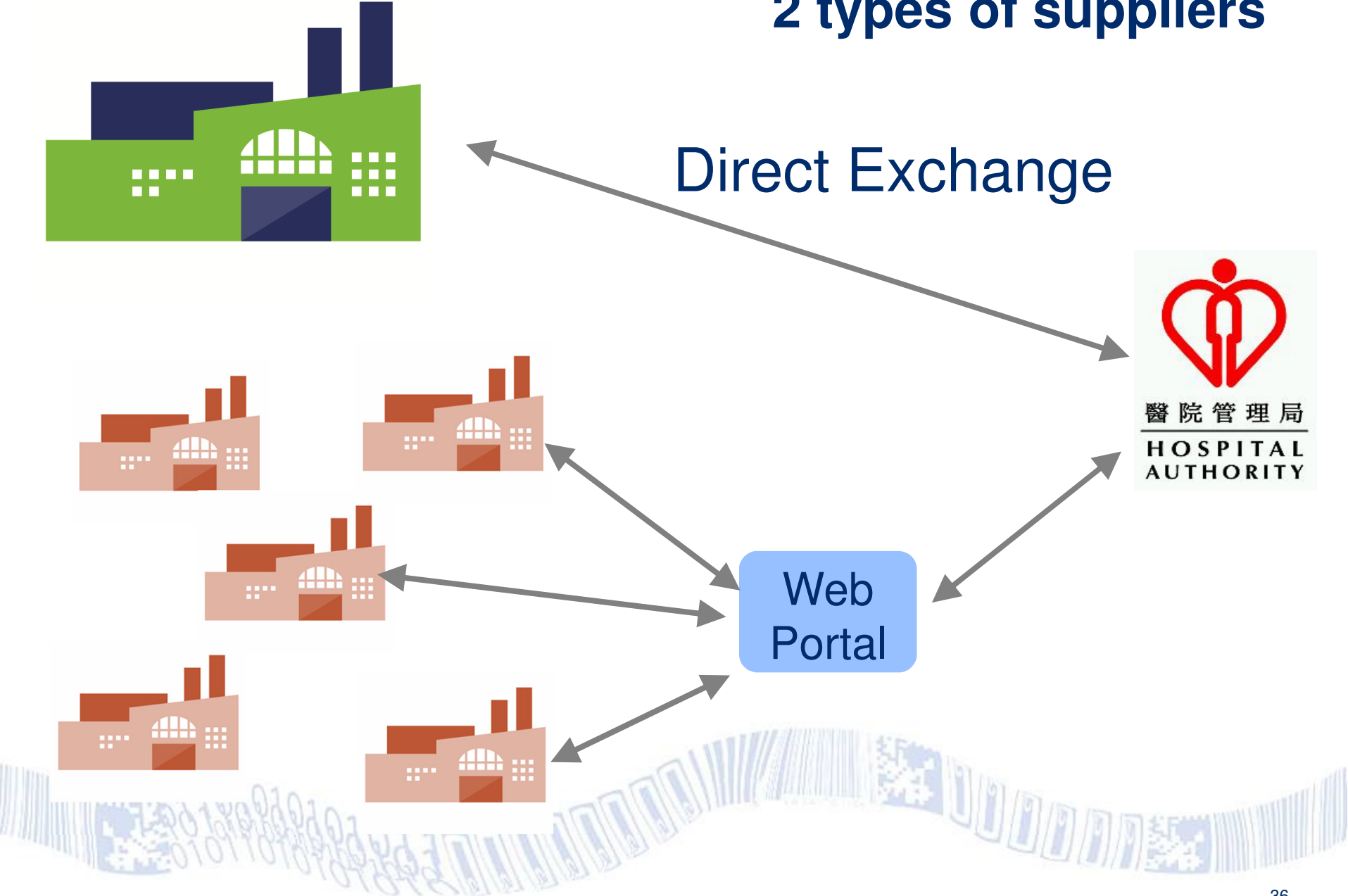
Provide suppliers a user-friendly web portal to handle electronic documents



# Required Electronic Document

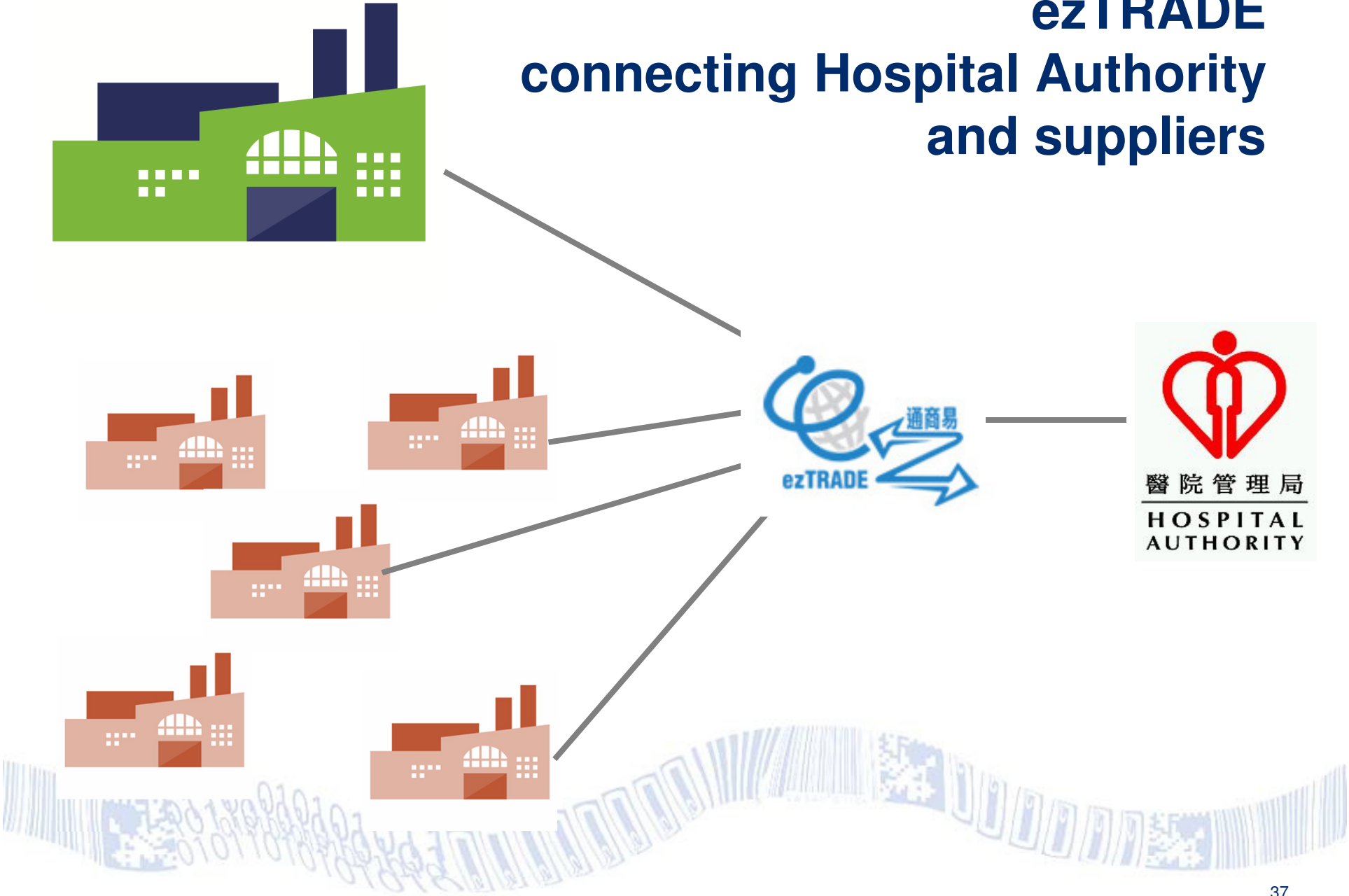


# 2 types of suppliers





# ezTRADE connecting Hospital Authority and suppliers





1. Since 1995, 1st EDI community platform for the retail and distribution industry in HK
2. Suppliers and buyers are connected by a single platform
3. Monitored by users committee

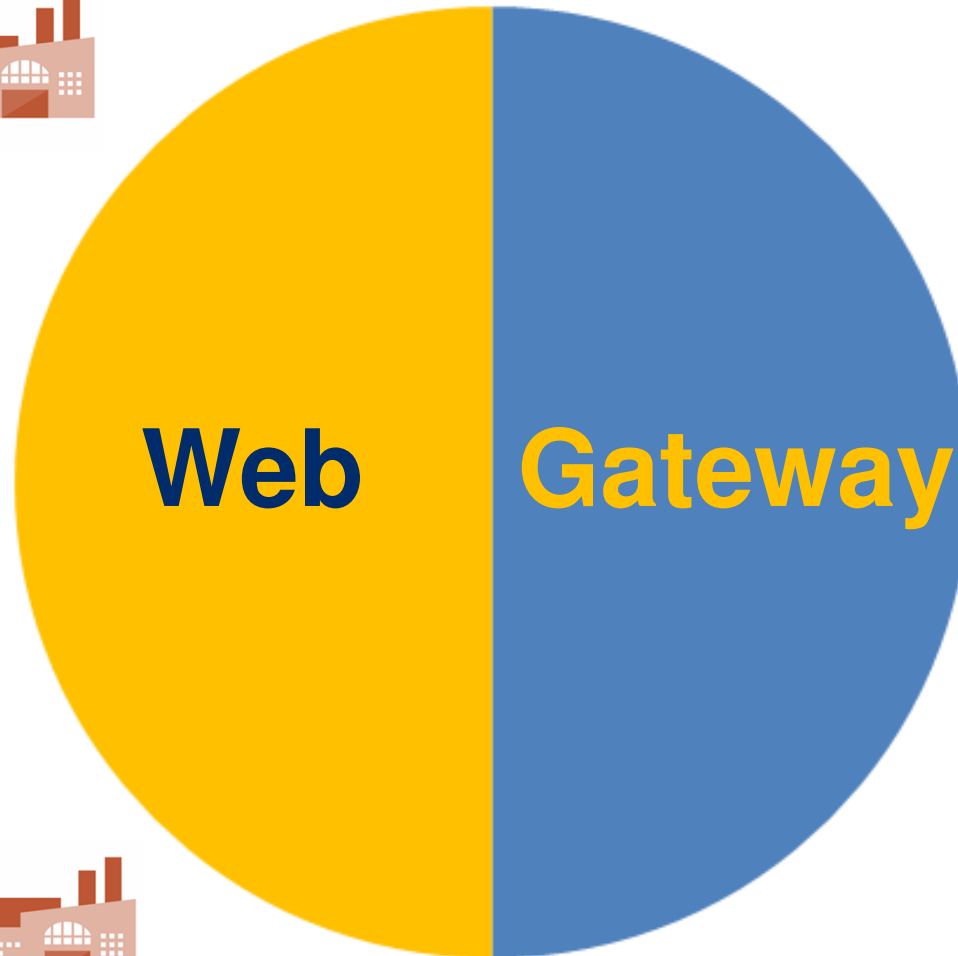


> 2,000 Suppliers and Retailers  
in HK and South China





## 2 types of options ezTRADE





## Flat file:

1	UNH	481	RA00002
2	DTM	13720090808	102
3	RFF	IA 12295	
4	GO1NADSU	4891668900032	VENDOR ABC
5	GO1NADBY	4893899000000	HANNINGS
6	GO4DOC380		INVO000
7	GO4MOA9	+00000000000180000.00	
8	GO4MOA38	+0000000000001000.00	
9	GO4DTM20090101		102
10	GO4RFFZZZ20090102		
11	GO4RFFON	PO00000	
12	GO4DOC380		INVO001
13	GO4MOA9	+00000000000010000.00	
14	GO4MOA38	+00000000000011000.00	
15	GO4DTM20090201		102
16	GO4RFFZZZ20090111		
17	GO4RFFON	PO00001	
18	GO6AJT4		
19	GO6MOA	+0000000000001000.00	
20	GO8DLI1	+000001	
21	GO8MOA146	+00000000000000011.00	
22	GO8PIA4890000000011		EN



Powered by GS1 Hong Kong

Company ID:  
489166800000  
User ID:  
HKANA

PO

Inbox

PO RESPONSE

Outbox

DESPATCH  
ADVICE

New

Drafts

Outbox

INVOICE

New

Drafts

Upload

Upload List

Outbox

PAYMENT  
REQUISITION

New

Drafts

Outbox

REMITTANCE  
ADVICE

Inbox

REPORT

Audit Trail

Error Report

HELP

BULLETIN

Register Email

LOG OUT

All UnRead PO

PO Number

Sender ID

Sender Name

Recv Date Range - Start Date

Recv Date Range - End Date

(YYYY/MM/DD)

(YYYY/MM/DD)

Search

Reset



view



print



View/Print Summary



create ASN



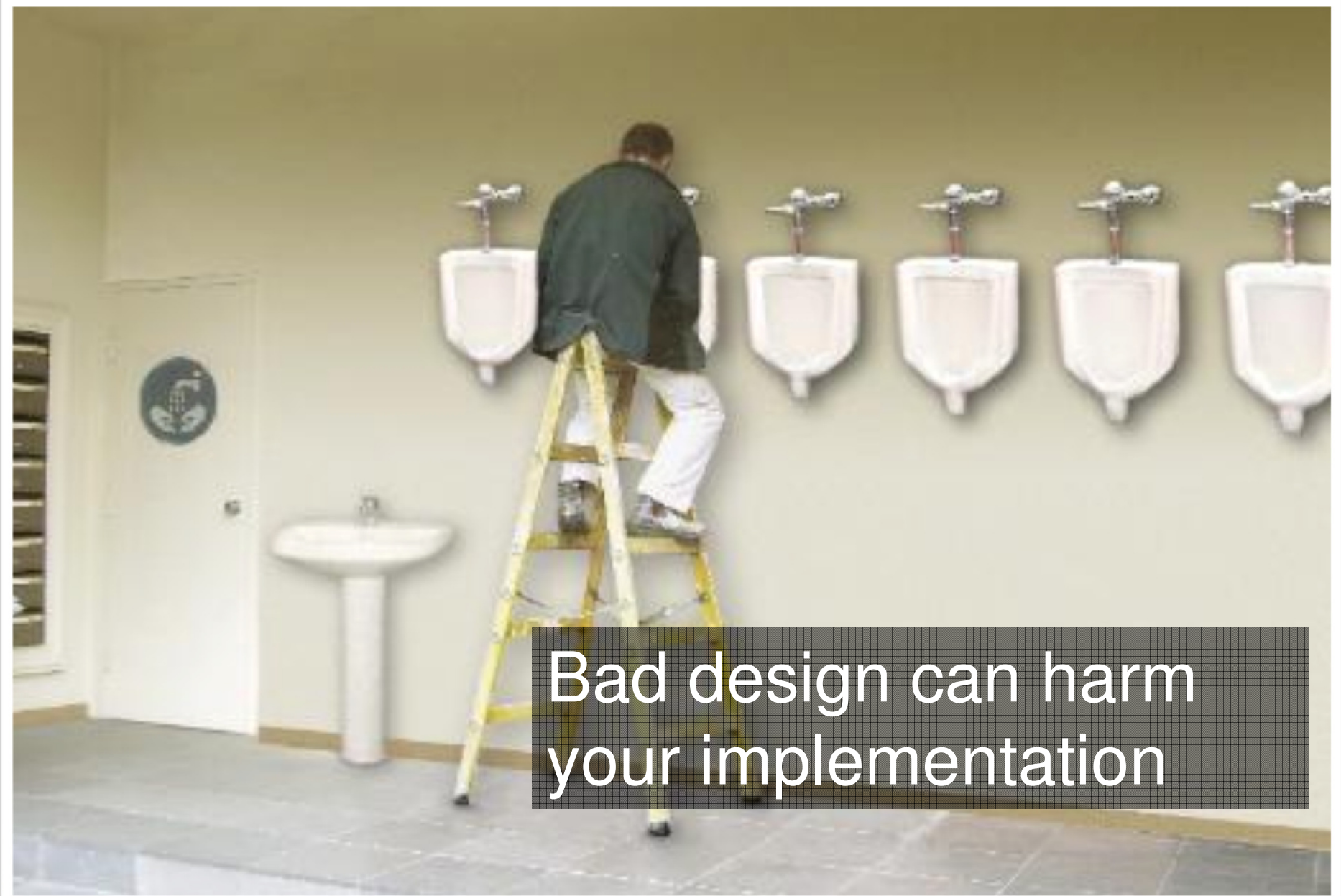
create PR



create Invoice

## PO INBOX

<input type="checkbox"/>	<u>PO No.</u>	<u>Ver.</u>	<u>Sender</u>	<u>Date Recv</u> ▾	<u>Doc Type</u>
<input type="checkbox"/>	<a href="#">2110043664</a>	2 ▾	HAHK (ERP)-TEST	2013/07/23 16:59	PO Chan
<input type="checkbox"/>	<a href="#">2110043665</a>	1	HAHK (ERP)-TEST	2013/07/23 12:00	Order
<input type="checkbox"/>	<a href="#">M-708-2013-2</a>	1	GS1 Gateway	2013/07/07 09:59	Order
<input type="checkbox"/>	<a href="#">M-708-2013-1</a>	1	GS1 Gateway	2013/07/07 09:59	Order
<input type="checkbox"/>	<a href="#">MAXIM-0626-2013-4</a>	1	GS1 Gateway	2013/06/26 19:20	Order
<input type="checkbox"/>	<a href="#">MAXIM-0626-2013-3</a>	1	GS1 Gateway	2013/06/26 19:20	Order
<input type="checkbox"/>	<a href="#">MAXIM-0626-2013-2</a>	1	GS1 Gateway	2013/06/26 19:20	Order
<input type="checkbox"/>	<a href="#">MAXIM-0626-2013-1</a>	1	GS1 Gateway	2013/06/26 19:20	Order
<input type="checkbox"/>	<a href="#">MITCH-0626-2013-4</a>	1	GS1 Gateway	2013/06/26 19:00	Order
<input type="checkbox"/>	<a href="#">MITCH-0626-2013-3</a>	1	GS1 Gateway	2013/06/26 19:00	Order
<input type="checkbox"/>	<a href="#">MITCH-0626-2013-2</a>	1	GS1 Gateway	2013/06/26 19:00	Order
<input type="checkbox"/>	<a href="#">MITCH-0626-2013-1</a>	1	GS1 Gateway	2013/06/26 19:00	Order
<input type="checkbox"/>	<a href="#">6210012219</a>	2 ▾	HAHK (ERP)-TEST	2013/05/07 13:24	PO Chan
<input type="checkbox"/>	<a href="#">1110022271</a>	2 ▾	HAHK (ERP)-TEST	2013/05/07 09:54	PO Chan



Bad design can harm  
your implementation





Web ASN was new

Attribution: Flickr/ ~Pawsitive~Candie\_N



# Human get lost with more than 1 page

**DESPATCH ADVICE DETAIL**

SSCC 0489166811111111111

#	GTIN	COO & Mfr. Name	Quantity	
<input type="button" value="trash"/>	1	4895011815004	HK JEAN	1.00
<input type="button" value="trash"/>	2	4895011815004	HK JEAN	5.00
<input type="button" value="trash"/>	3	4895011815110		

**ASN Page 1**

1. "Click Item # for next entries"

**REFER**

Ref. Type   
 Ref. No. 6210000123  
 Ref. Date   
 Ref. Date Qualifier

Ref. Type BATCH NUMBER/LOT NUMBER   
 Ref. No. ABCD1234  
 Ref. Date Qualifier REFERENCE DATE/TIME

Ref. Line # 1  
 Ref. Date   
 (CCYY/MM/DD)

Ref. Line #

**Page 2**

2. Choose Batch Number in dropdown box

3. Enter Batch Number

# Anything that can go wrong will go wrong, “Murphy’s law”


NAME AND LOCATION				Add
Party Qualifier	SHIPPER (EAN CODE)	Party GLN	4895063300015	Delete
Party Qualifier	DELIVERY PARTY	Party GLN	1000000000002	Delete
Party Qualifier	BUYER	Party GLN	4895063300015	Delete
Party Qualifier	SUPPLIER	Party GLN	4895063300015	Delete

1. Editable Field

2. Delete Button

**Buyer &  
Supplier ID**





# Redesign with 3 principles

1. Minimized entry
2. Single page for entry
3. Error Proof





1. No edit, No delete

NAME AND LOCATION										
Shipper GLN	4891668000008		GLN Address	N/A						
Delivery GLN	4895063306567		GLN Address	AH0-CB-B1-MAIN PHARMACY B1/F, BLOCK C, ... <a href="#">Read more</a>						
Buyer GLN	4895063300015		GLN Address	N/A						
Supplier GLN	4891668000008		GLN Address	N/A						

DESPATCH ADVICE DETAIL (ASN)										
SSCC	04891668223232223									
#	GTIN	Item Code	PO Line No.	COO	Serial#	Batch#	Expiry Date (CCYY/MM/DD)	CAPD DN	PO#	Quantity
1	771313002790		1	CA <input type="text"/>		1	2014/01/02		6210012219	30.00
	GTIN Description	N/A								
2	771313077842		2	CA <input type="text"/>		1	2014/01/02		6210012219	10.00
	GTIN Description	N/A								

2. One page only

3. Auto Validation



Advice #3:  
Have GS1 train and support  
your suppliers

1 & ½ years  
from preparation  
to implementation  
Dec 2010 to Jun 2012



# Supports to suppliers

**Specification  
& Guideline**

**Training**

**Referral to  
printing  
companies**


**Tests**



In Jun 2012	By Apr 2014
Engaged 14 suppliers	Additional 13 suppliers
70% of order lines	Additional 16 % of order lines
54.61% of total pharmaceutical product	Additional 9.73% of total pharmaceutical product





An aerial photograph of a sandy beach with several footprints scattered across the surface. The footprints are of varying sizes and orientations, some showing clear tread patterns. The sand is a light, warm tone, and the lighting creates soft shadows, emphasizing the texture of the sand and the depth of the prints.

“A journey of a thousand  
miles begins with a single  
small step”

Lao-zi



This work includes materials from the following sources:

Page No.	Image Source
15	“Open Make Up For Ever 2013 - Team - France - 15.jpg” by Pierre-Yves Beaudouin / Wikimedia Commons available at <a href="http://commons.wikimedia.org/wiki/File:Open_Make_Up_For_Ever_2013_-_Team_-_France_-_15.jpg">http://commons.wikimedia.org/wiki/File:Open_Make_Up_For_Ever_2013_-_Team_-_France_-_15.jpg</a> under a Creative Commons Attribution-ShareAlike 3.0 Unported. Full terms at <a href="http://creativecommons.org/licenses/by-sa/3.0/">http://creativecommons.org/licenses/by-sa/3.0/</a>
23	“Found Blur Motion” by ilouque available at <a href="http://www.flickr.com/photos/38305988@N08/6169402770/in/photolist-apaNvh">http://www.flickr.com/photos/38305988@N08/6169402770/in/photolist-apaNvh</a> under a Creative Commons Attribution 2.0 Generic. Full terms at <a href="http://creativecommons.org/licenses/by/2.0/deed.en">http://creativecommons.org/licenses/by/2.0/deed.en</a>
44	“hatching egg 1” by ~Pawsitive~Candie_N available at <a href="http://www.flickr.com/photos/scjn/5005892005/">http://www.flickr.com/photos/scjn/5005892005/</a> under a Creative Commons Attribution 2.0 Generic. Full terms at <a href="http://creativecommons.org/licenses/by/2.0/deed.en">http://creativecommons.org/licenses/by/2.0/deed.en</a>
47	“lemonhalf packaging” by Beck Gusler available at <a href="http://www.flickr.com/photos/halfbisqued/4201775410/">http://www.flickr.com/photos/halfbisqued/4201775410/</a> under a Creative Commons Attribution-ShareAlike 2.0 Unported. Full terms at <a href="http://creativecommons.org/licenses/by-sa/2.0/deed.en">http://creativecommons.org/licenses/by-sa/2.0/deed.en</a>
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