

# Case Study

Pharmaceutical Track And Trace System  
in Turkey



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Define and identify the problem

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Identify possible solutions, select the best one

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Define the solution

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Outcomes of the system

the problem ■ was;



Prevent the sale of counterfeit drugs

Prevent the sale of smuggled drugs

Support rational use of medicines, supply data to control market

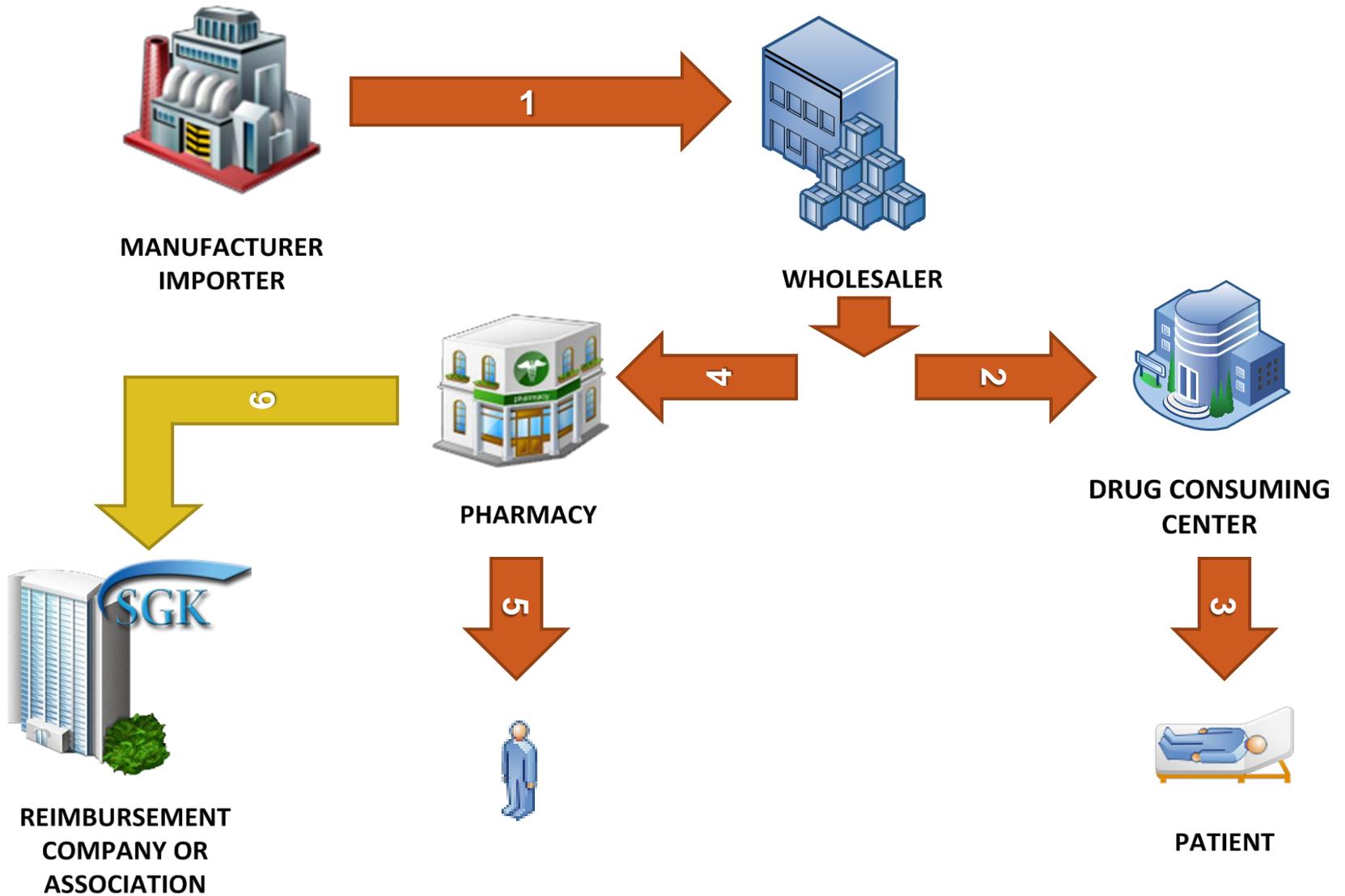
Ensure and guarantee the reliable supply of drugs to patients

Prevent barcode scams

Prevent illegal sale of drugs



# The situation in Turkey was;



the solution is;



## define the solution

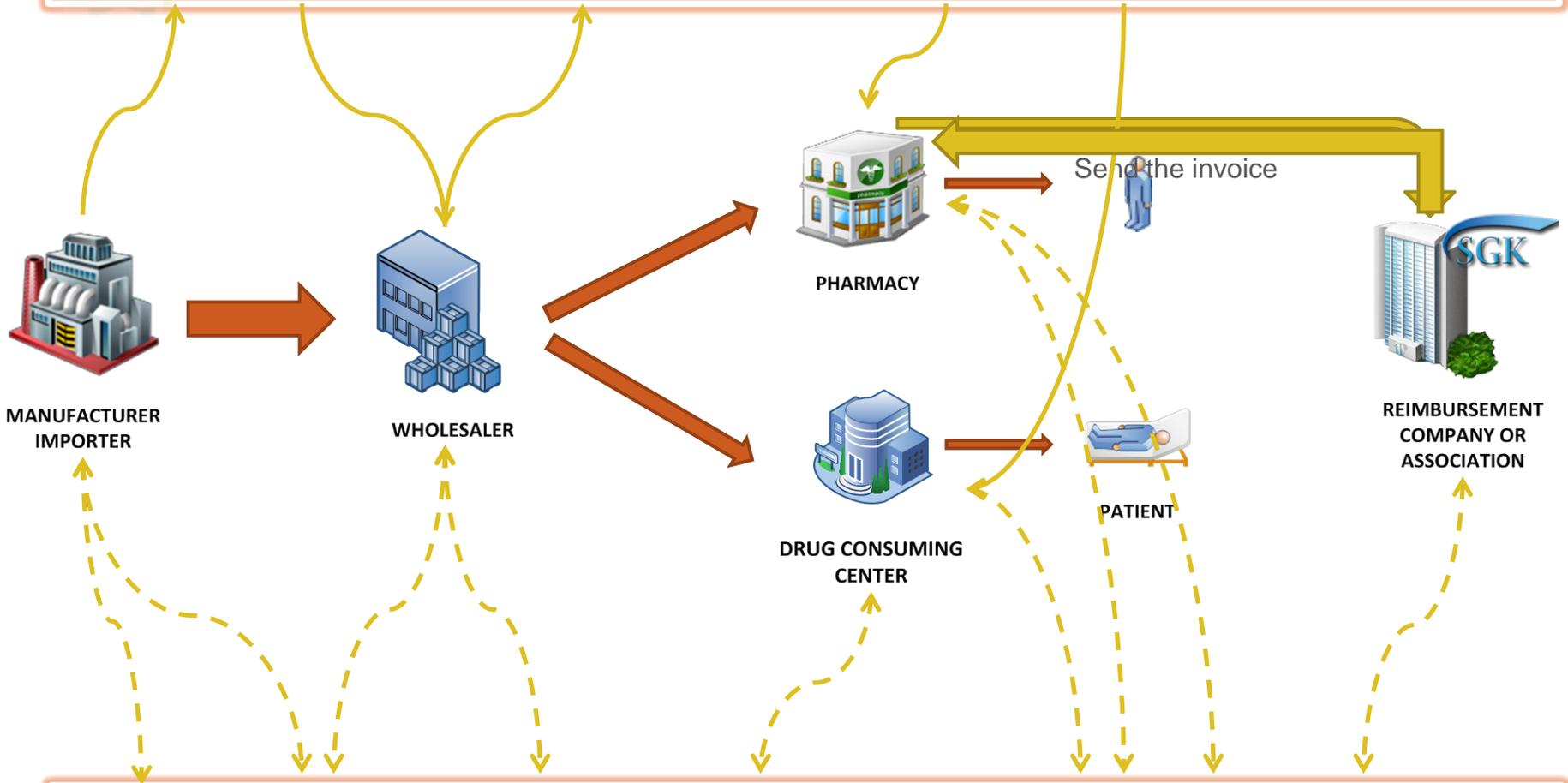
The Turkish “Pharmaceutical Track and Trace System” (abbreviated as İTS) defines the infrastructure constructed to track and trace all units belonging to each pharmaceutical product in Turkey. İTS is the application of the well-known “Track & Trace” structure applied to the pharmaceutical industry. The serialization providing the uniqueness of the units is ensured by the DataMatrix code instead of formerly used barcode. The ability to track each drug unit is provided by gathering the information of each unit in every single step and action; and traceability is provided by its pedigree.



# The situation in Turkey is;



Downloadable XML file of the invoice (including technical structure)



Downloadable Receipts for Serialized Pharmaceuticals

# implement the solution



Shipping

Receiving

- ❖ Workshops
- ❖ Standards
- ❖ Legislations
- ❖ Preparatory Period

- ❖ Serialization
- ❖ Manufacture Notification
- ❖ Sale Not.
- ❖ Sale Query

- ❖ Aggregation
- ❖ Full Track And Trace
- ❖ Monitoring
- ❖ Support Decision

## Some Statistics (Stakeholders)

Stakeholders	Quantity
Manufacturer	331
Exporter	13
Wholesaler	274
Drug Consuming Center	24.424
Retail Pharmacy	15.290
Reimbursement	41
<b>TOTALS</b>	<b>40.373</b>

Updated data can be  
found at <http://its.gov.tr>

## Some Statistics (Products)

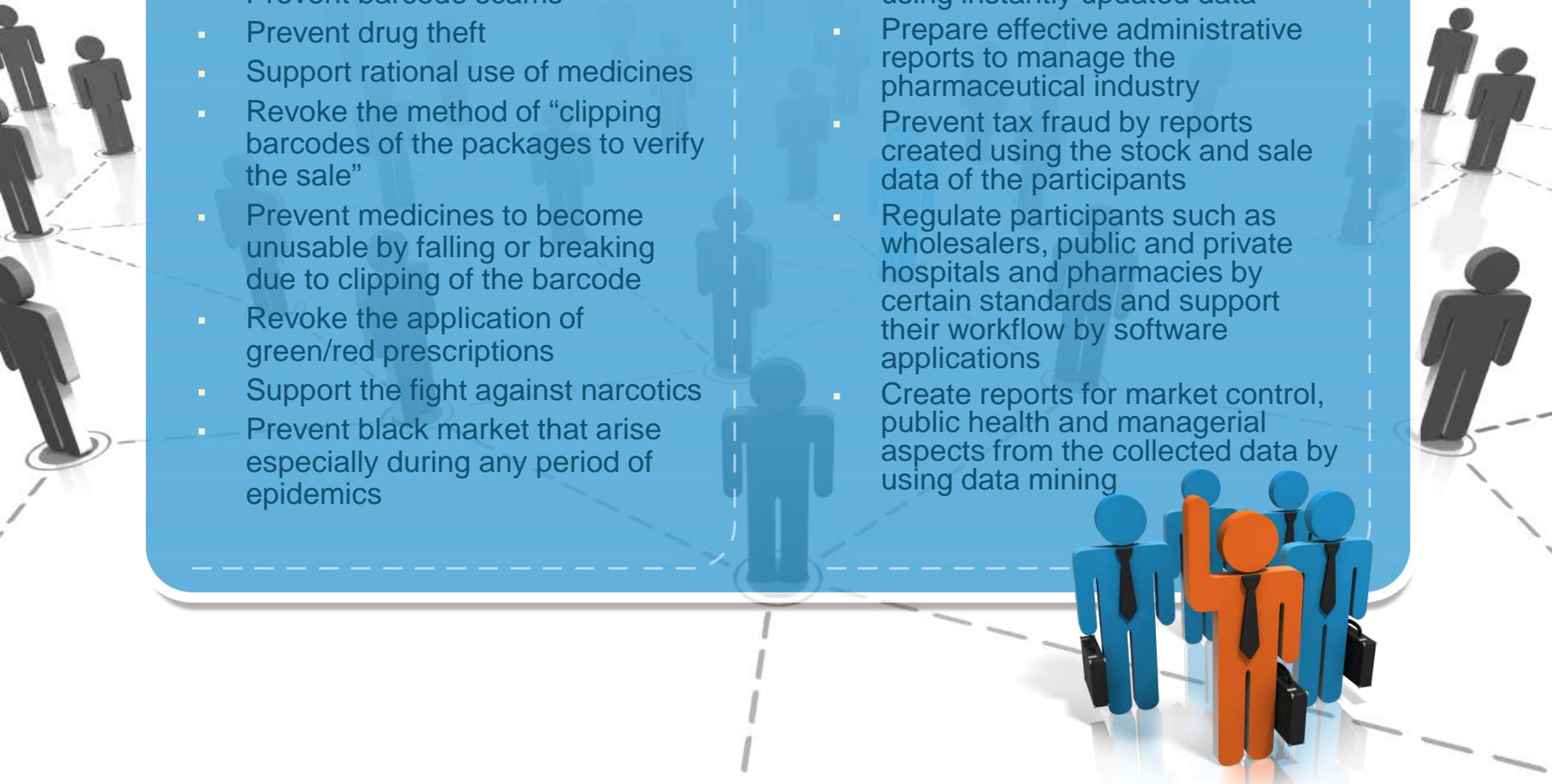
**TOTAL DRUGS IN THE SYSTEM : 6.557.368.558**

Manufacturer	1.412.623.257	Sold	3.820.988.809
Wholesaler	400.373.113	Deactivate	220.085.147
Pharmacy/Hospital	606.861.216	Exported	8.691.797
		Consumed	79.805.952
		Recalled	7.939.267
	<b>2.419.857.586</b>		<b>4.137.510.972</b>

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found at <http://its.gov.tr>

# Outcomes of the system

- Prevent the sale of counterfeit drugs
- Prevent the sale of smuggled drugs
- Prevent illegal sale of drugs
- Prevent barcode scams
- Prevent drug theft
- Support rational use of medicines
- Revoke the method of “clipping barcodes of the packages to verify the sale”
- Prevent medicines to become unusable by falling or breaking due to clipping of the barcode
- Revoke the application of green/red prescriptions
- Support the fight against narcotics
- Prevent black market that arise especially during any period of epidemics
- Take instant and precise actions on recalls
- Do more effective and accurate market surveillance and inspection
- Make faster decisions and do more consistent estimations by using instantly updated data
- Prepare effective administrative reports to manage the pharmaceutical industry
- Prevent tax fraud by reports created using the stock and sale data of the participants
- Regulate participants such as wholesalers, public and private hospitals and pharmacies by certain standards and support their workflow by software applications
- Create reports for market control, public health and managerial aspects from the collected data by using data mining



# Comparison of ITS and e-Pedigree

ITS	e-Pedigree System (CPS)
<b>Serialization at unit level</b>	
Centralized Architecture	Document Based Architecture
Fed By Stakeholder Notifications	Document size increasing by stakeholder data insertions
Big Data Management Issue	Stakeholder's Own Data Management
Source of counterfeit can be detected in seconds	Detecting the source of counterfeit depends on the reports of the stakeholders and also inspectors checking



# Comparison of ITS and e-Pedigree

ITS	e-Pedigree System
No inspector needed	More inspectors needed
Data managed by one hand	Respective data are managed by stakeholders
Data protection is easier	
Low Total Cost Of Ownership	Low but multiple costs for every stakeholder
Instant Recalls	No Automatic Recall Management
Enables sector-specific reports	---



to learn more...

**We Track  
Pharmaceuticals  
All The Way**



**Pharmaceutical Track and Trace System**

The ITS is a fully integrated system designed to track pharmaceuticals from the manufacturer to the end user. It is designed to be used by all pharmaceutical manufacturers, distributors, and end users. The system is designed to be used by all pharmaceutical manufacturers, distributors, and end users. The system is designed to be used by all pharmaceutical manufacturers, distributors, and end users.

**We Protect  
Public Health**



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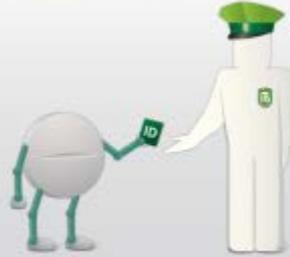
**We Know  
Everything About  
Every Single  
Tablet**



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**We Validate  
The Reliability  
of Pharmaceuticals**



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<http://its.technarts.com.tr>



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