

# It started from Barcelona.

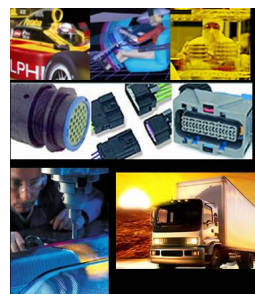
**Kaz Nakada**

**Delphi International Services, Inc , Zurich Switzerland**

Barcelona, 3. Oct .2007



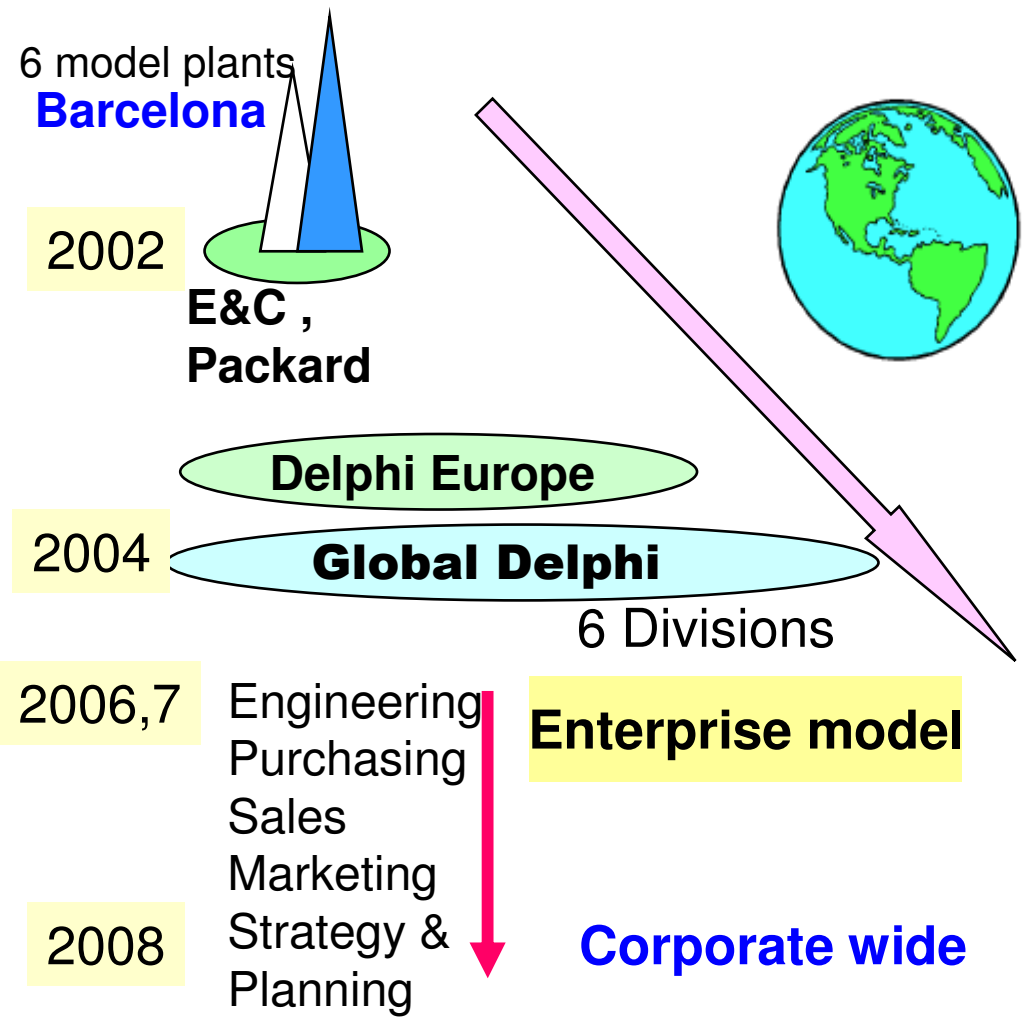
# Delphi outlook



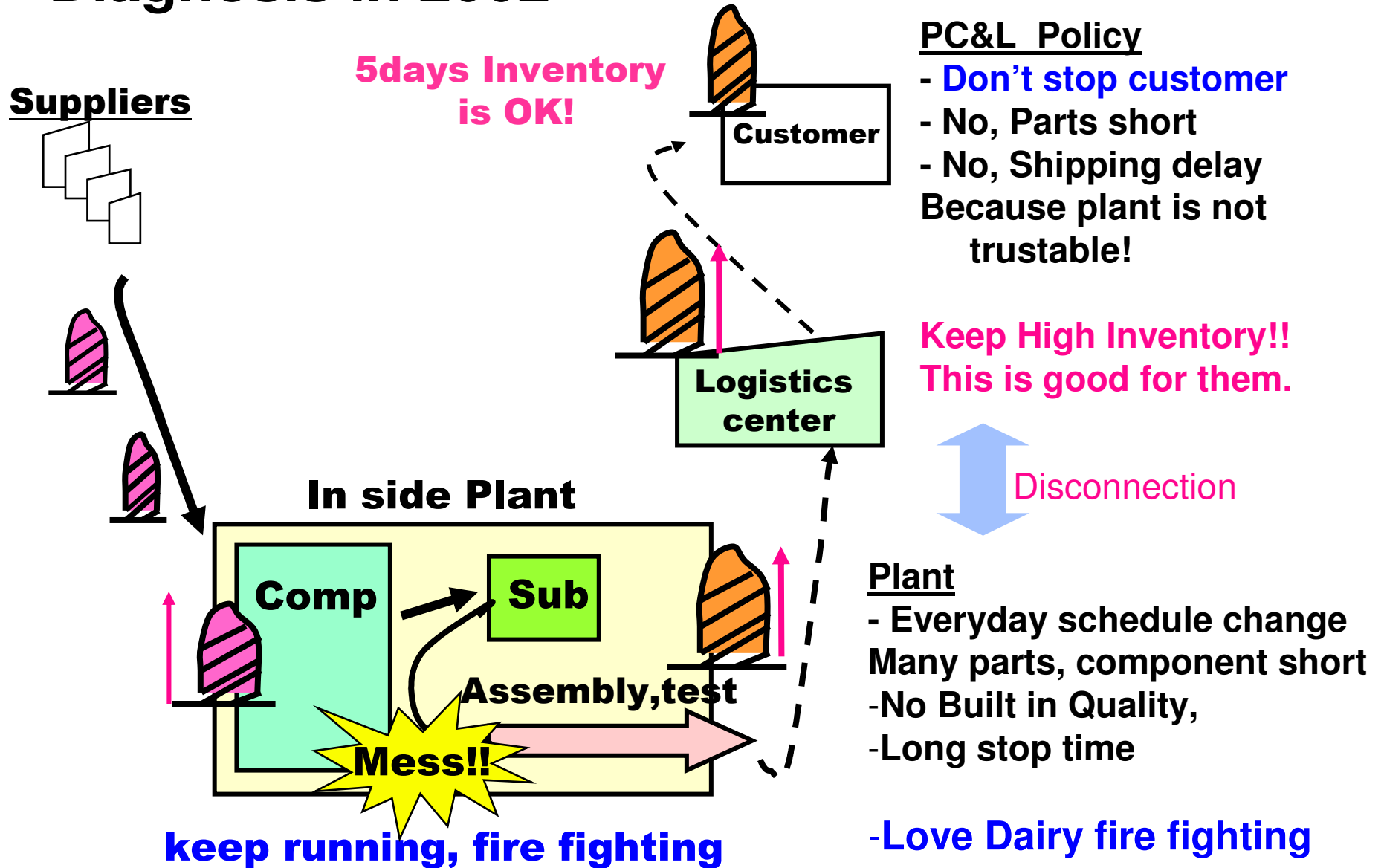
\$26.4 billion sales (2006)  
 163 wholly-owned plants  
 42 joint ventures  
 33 technical centers  
 170,000 employees  
 Operating in 36 countries

**Portfolio:**  
 Control security Systems  
 Electrical / Electronics Architecture  
 Powertrain : Gas / Diesel  
 Safety  
 Thermal : Climate control & Engine cooling

## Delphi Lean strategy in 2002



# Diagnosis in 2002

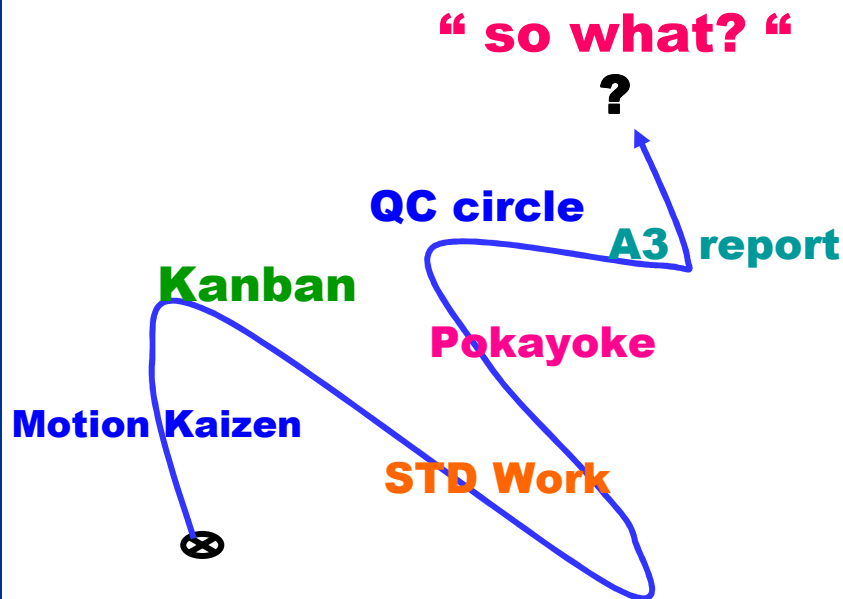


# System Approach

**Business objectives first.**

## Lean knowledge Driven

(Subject matter Kaizen)



**Spot & local Kaizen**  
Just do what I **can** do!!

## System Approach



**System Kaizen approach.**  
Just do what I **must** do!!

# Diagnosis & Treatment plan in 2002

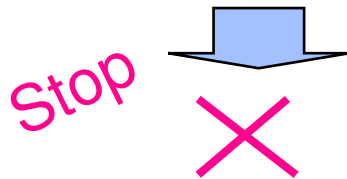


2002

Rump up phase 2000/D to 5000/D

**Wrong parts , wrong time,**  
Every day Schedule change  
No total integration.

**Right person didn't feel pain.**

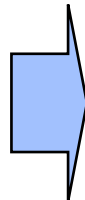


Before 2002

Low up time, High Down time.  
No built in Quality  
Budget Focus, not total Cost focus



**Poor Quality, Poor delivery ,**  
**High Cost,**  
Dairy firefighting.  
They believed this was job.



## New direction in Barcelona in 2002

- 1. Re-set Leadership mind**
- 2. Design Vision “Dairy BTO”**
- 3. Fix Prerequisite ...It was hard work.**  
( Built in Quality, Up time, Change over )
- 4. Re-new Lean Tool, process**  
Processes layout ,Connectivity,  
New **BTO scheduling logic.**
- 5. Surgery**  
“**New business model Process**”  
to make “ **right parts, right time**”
- 6. Use and achieve Cost reduction**
  - **Capacity** utilization, reduce machine.
  - **Manpower** utilization

# Reminder ( My basic Kaizen steps)



## Leadership must.....

1. Know the Symptom... Wrong parts, wrong time... **Poor delivery**  
No Built in Quality, No Quality gate,.. **Poor Quality**  
Not reliable lead time... **totally uncontrollable cost**

## Mind set!

2. Want to fix the disease Stop looking for excuse.  
What's your a **business model problem**?  
How serious? **Do they feel pain?**  
What's your **vision**? What do you want to be?  
( Design New business model)
3. Understand Medical treatment plan... Set the **priority** of actions...  
**Fix prerequisite**, Quality, change over time, up time  
Don't copy Toyota, **design your own Business process**
4. Accomplish Medical surgery... introduce **New business model process.**
5. Reset the next target and Goal. And use the result.

# Brcelona Diesel Pump plant No.1

Sales 200 Mil Euro

1000 Employee

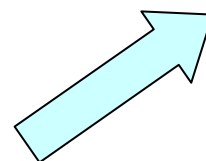
1.5 mil Units / Year



After ( 2004)



Before (2002)

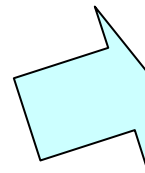


# Barcelona Diesel Pump plant No.2



After new Dairy BTO & new Layout for Pull system

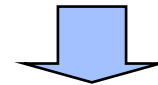
Before 2002



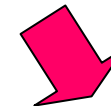
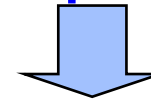
After 2004



Took out excess Machines



Free space



Ship to China.

For new business.

“Next generation pumps.”

No additional expansion.



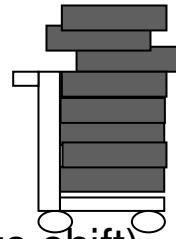
Isolated islands, Excess inventory

# Built in Quality

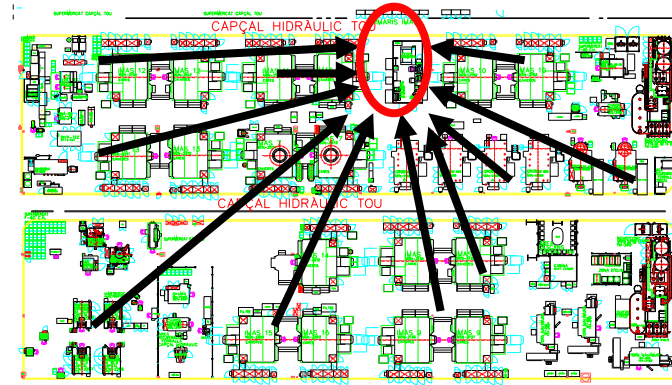


- Discoveries: 2002

- Long lead time (Bad response time to FTQ & Slow feedback)
- **Push, waiting time**
- Big lot size
- Non standard
- Non clear instruction
- Not Job balance (shift to shift)
- No priority – No rules
- **By Human computer**

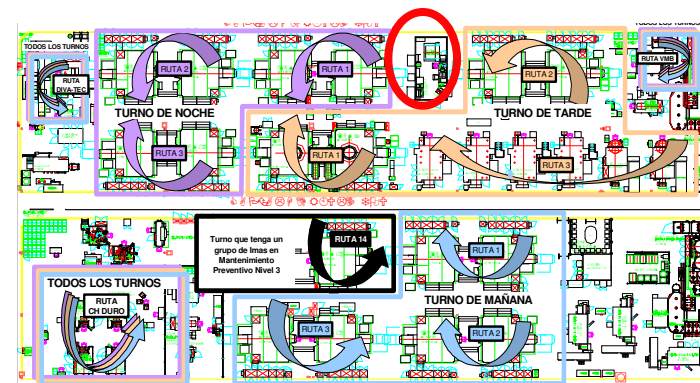
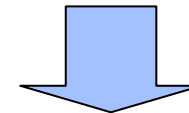


Example:



Actions: Re-new **Quality process & feed back**

- » Small lot
- » Small loops (High frequency)
- **Scheduled Quality Check**
- **Calling system**
- **FIFO**
- Standard Route
- Job balance (shift to shift)
- Visual management



# Delphi Common approach (since 2004)



Lean MFG & Logistics

Internal Delphi Plant

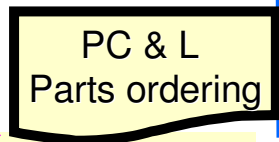


**Step 1**

**BTO Scheduling**



Customer Tomorrow's ship request



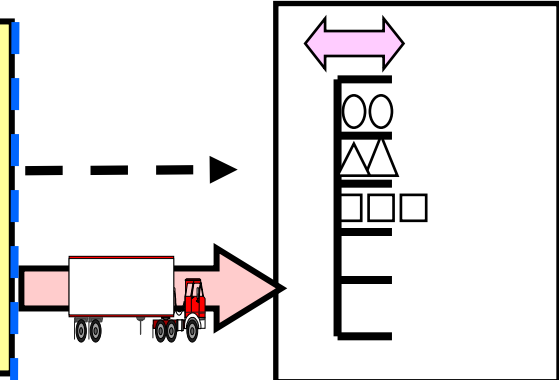
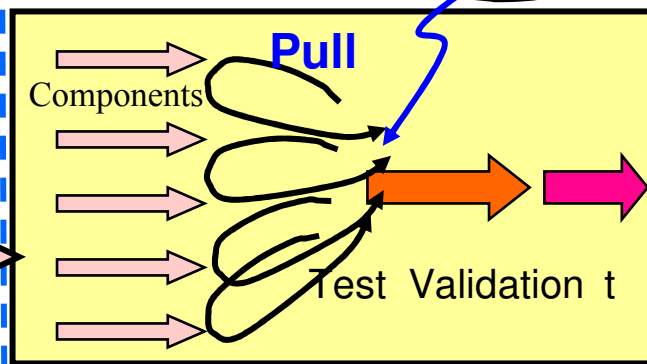
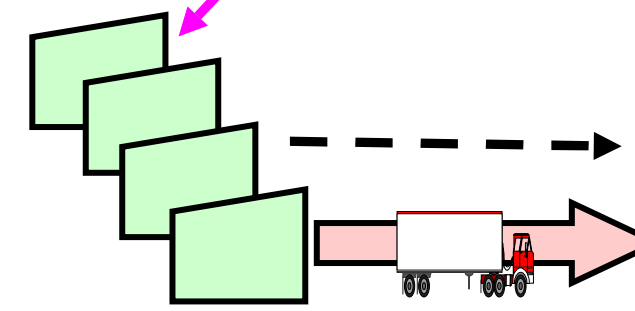
OTB



**Step 2**

**Parts Ordering**

Suppliers



**Step 3**

**Logistic inbound**

**Manufacturing**

**Process & usage**

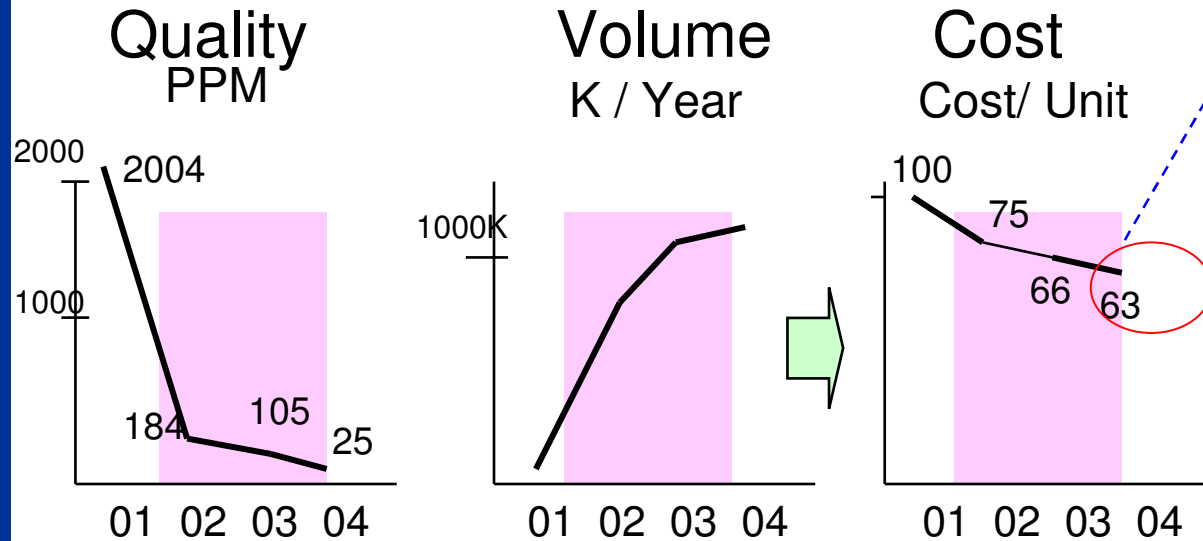
Built in Quality, Quick change over

**Step 4**

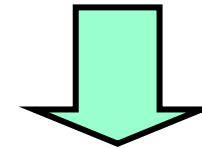
**Logistic Outbound**

Pull connection, STD work , etc

# Barcelona Diesel Plant Overview



We understood  
**“Limitation of  
 Lean MFG, Logistics.”**



**It's too late!**



10 Months- 2 years

**Plant wide**

**Process change Lead time**

- Manufacturing
- Scheduling BTO
- Parts ordering

**Barcelona**

- Focus on **New Pump.**( 2005 SOP)
- Feed back to Up stream.

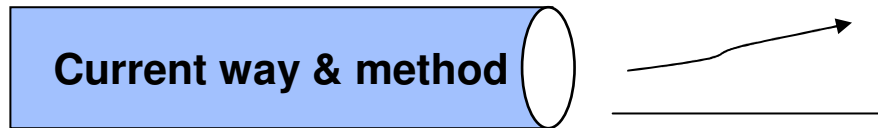
**Kaz**

- Copy & Paste on **all Division in 2005**  
**Engineering**  
**Purchasing** in North America

# 2 Different “Kaizen” Types

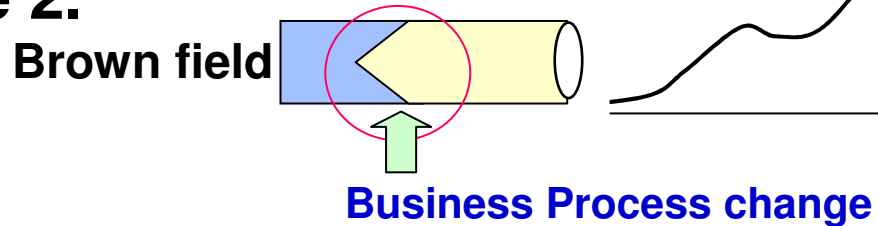


## Type 1.



Improve the performance by using the current way.  
Motion Kaizen etc.

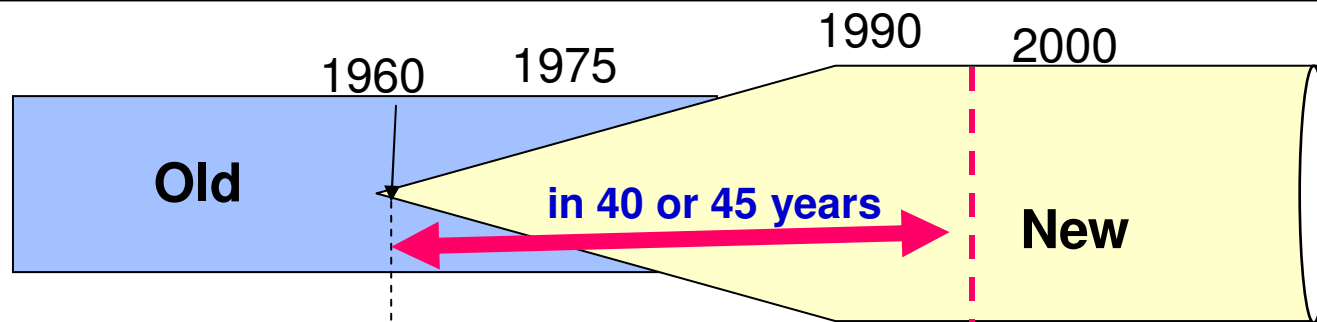
## Type 2.



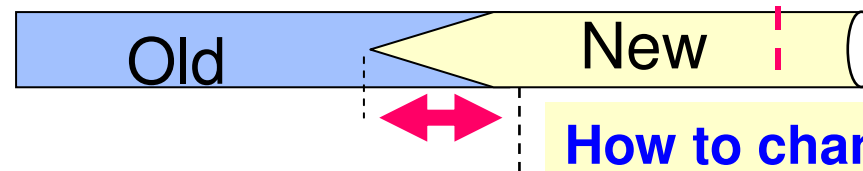
These are not same.

System Kaizen,  
Process Kaizen  
Business Model change

## Toyota



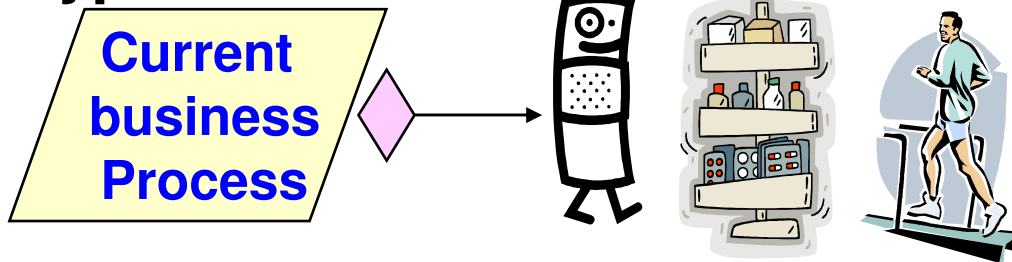
## Delphi's task



# Traditional Kaizen vs, Process Surgery

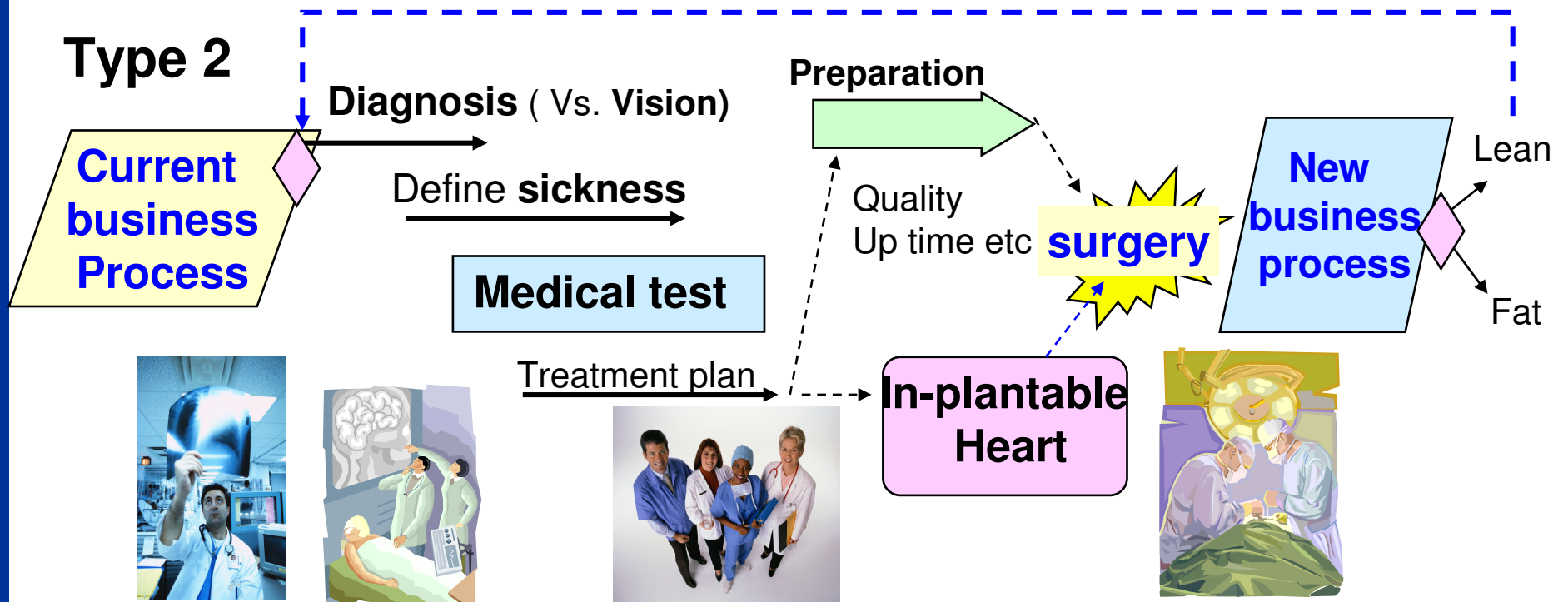


## Type 1

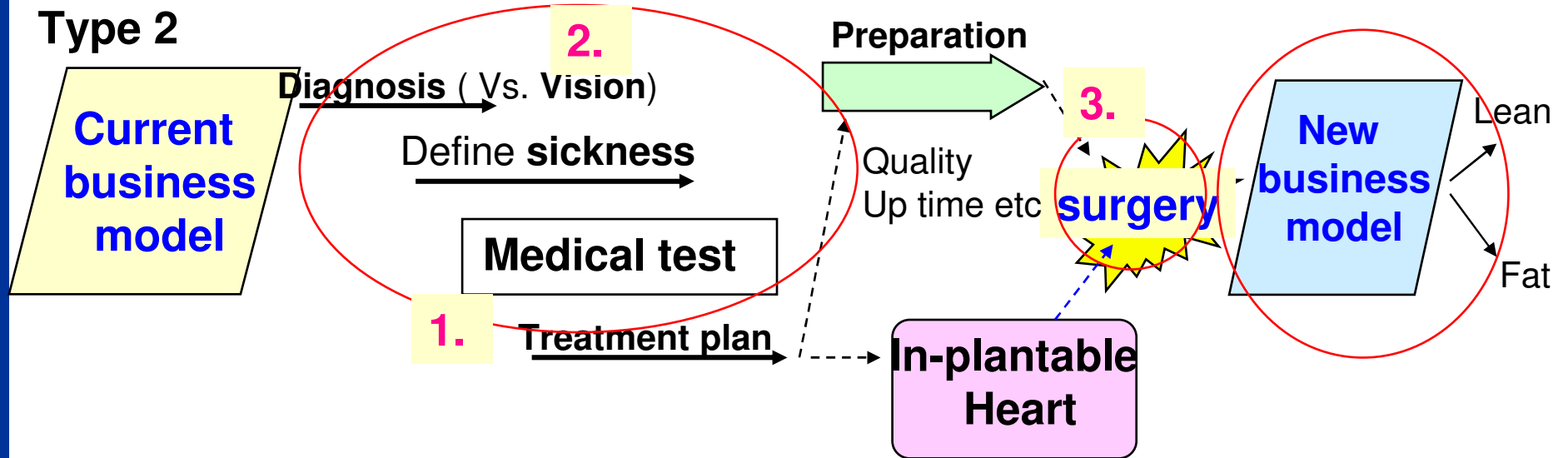


Lean = better performance  
Subject matter coaching.

## Type 2



# Weakness in MFG, Logistics area



## Missing point of the current Lean Activity

- 1. **Wrong Treatment** ----- Band aid Kaizen : **Motion Kaizen , 4S ,Focus**  
No Big picture, detail first! Subject matter!  
**Scheduling issue** is very weak. ( MFG vs. PC&L)
- 2. No image of **Business model & process design** ----Just Do it, **No Logic.**
- 3. **No Lean surgery Medical Sill**-----Lack of basic **Lean Medical knowledge & Experience**  
(Wrong judgment, mis-opration etc)

**Test for your consultant: Please check Logic behind his Treatment Plan.**

## Typical mistake in Lean Implementation ( my observation)



1. No vision or **Wrong vision**... but start local kaizen...

**Start Medical Surgery**..... No preparation.

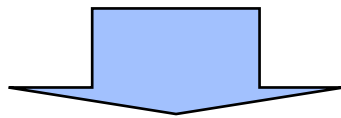
**No Business model image**

2. **Do everything in one time.** ( No priority)

Because 1. Boss request!! “Just do it. Keep firefighting, make budget!”

2. No total **integration Image and skill.**

3. Start **cherry pick**, with Wrong priority. But no one complain.



You must select **Right Consultant** who has **general & surgery doctor Skill.**  
Do they know the ideal Total body health system integration?

Most of case, **they like to teach” What I know”**

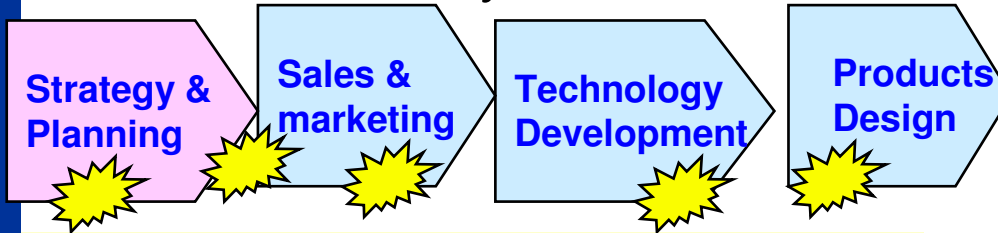
They don't care “ **What 's your body( Plant) need to fix your sickness?”**

# Approach to Enterprise model in Delphi since 2005



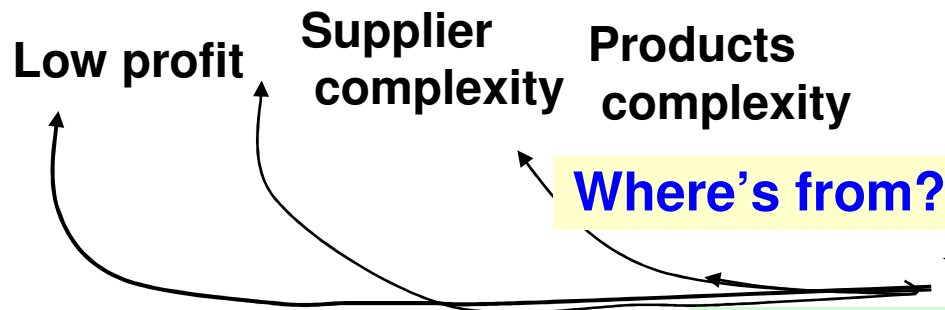
## In Case : OEM business

Tomorrow's money



**(Same approach)**

1. Defining all processes
2. Fix the usage of business process

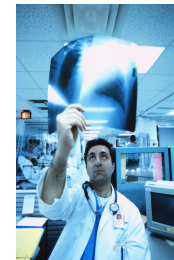
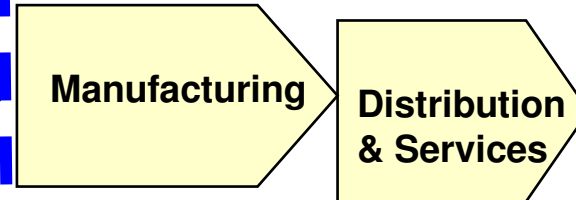


2006-2008

2003- 2006

**Dairy business**

Today's money



Accomplish

- Dairy BTO schedule
- Logistics in, out bound



Unsolved issue

- Material cost , (60%-70%)
- Complexity Logistics next work
- Over capacity,
- Firefighting foot print change

Our Typical pain ( Example of Fact)

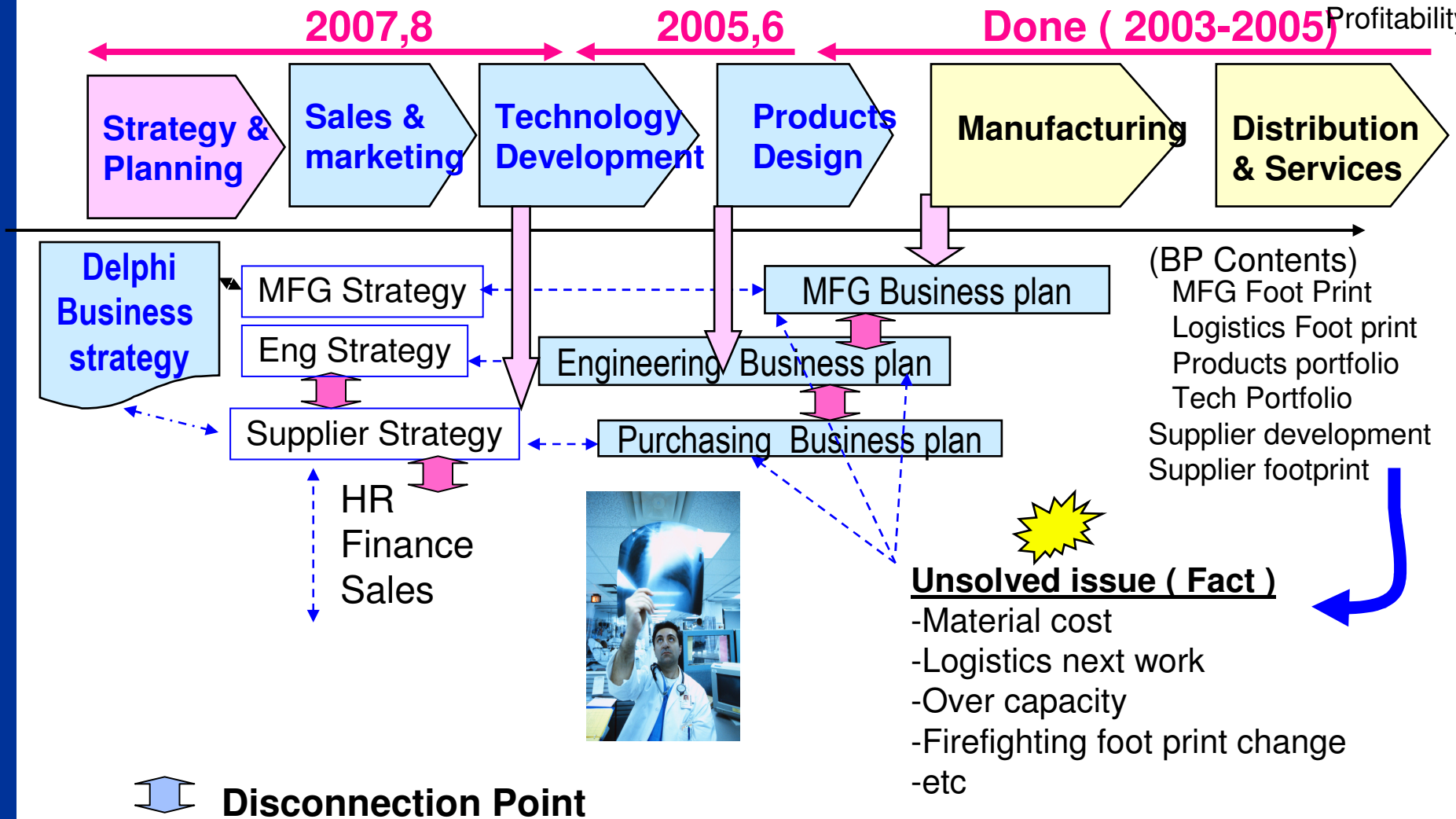
- Too many parts
- Too many suppliers
- No Attractive technology

# Define & re-design “Lean Enterprise process by Division”

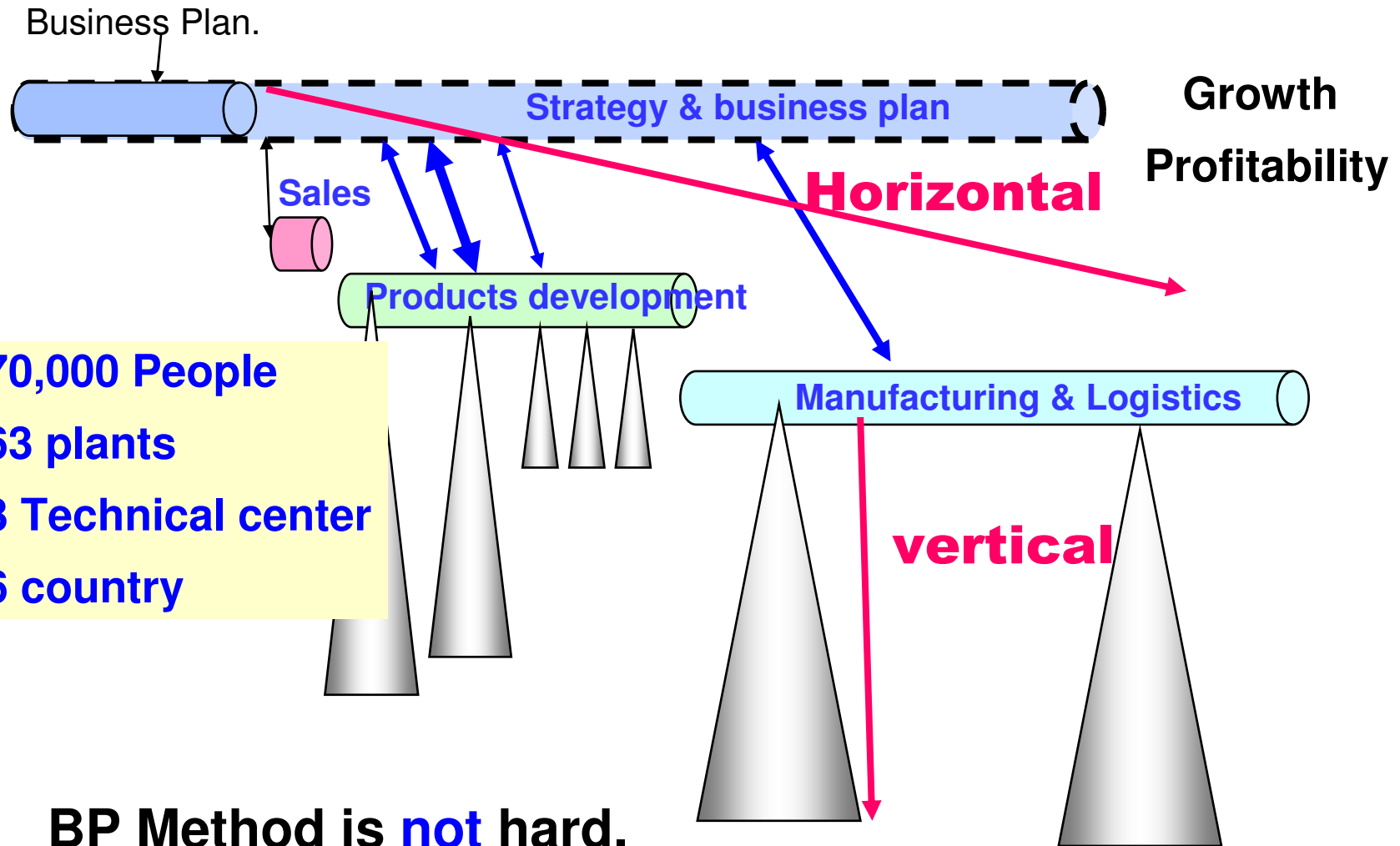


In case : OEM business

Growth, Profitability



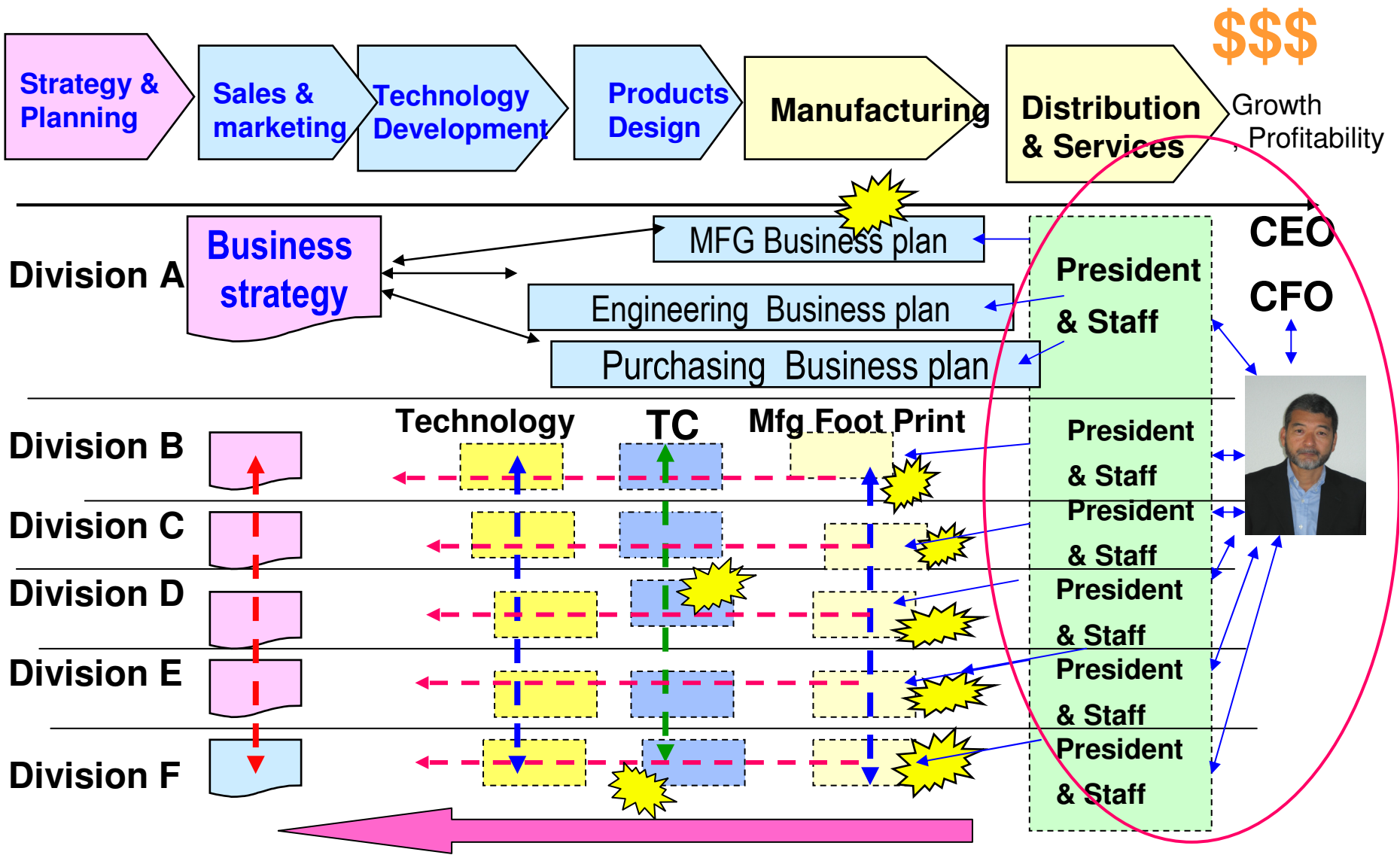
# Use Business plan deployment = Houshin Kanri



BP Method is **not** hard.

The **Contents of BP, Process connectivity** are key.

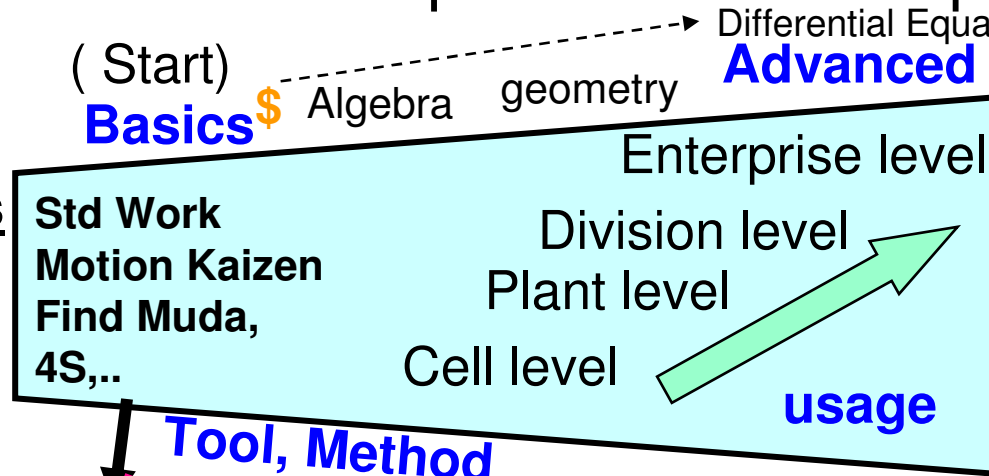
# Total Delphi Global Enterprise in divisions across divisions in 2007.



# Gap: Education Steps vs. Implementation Steps

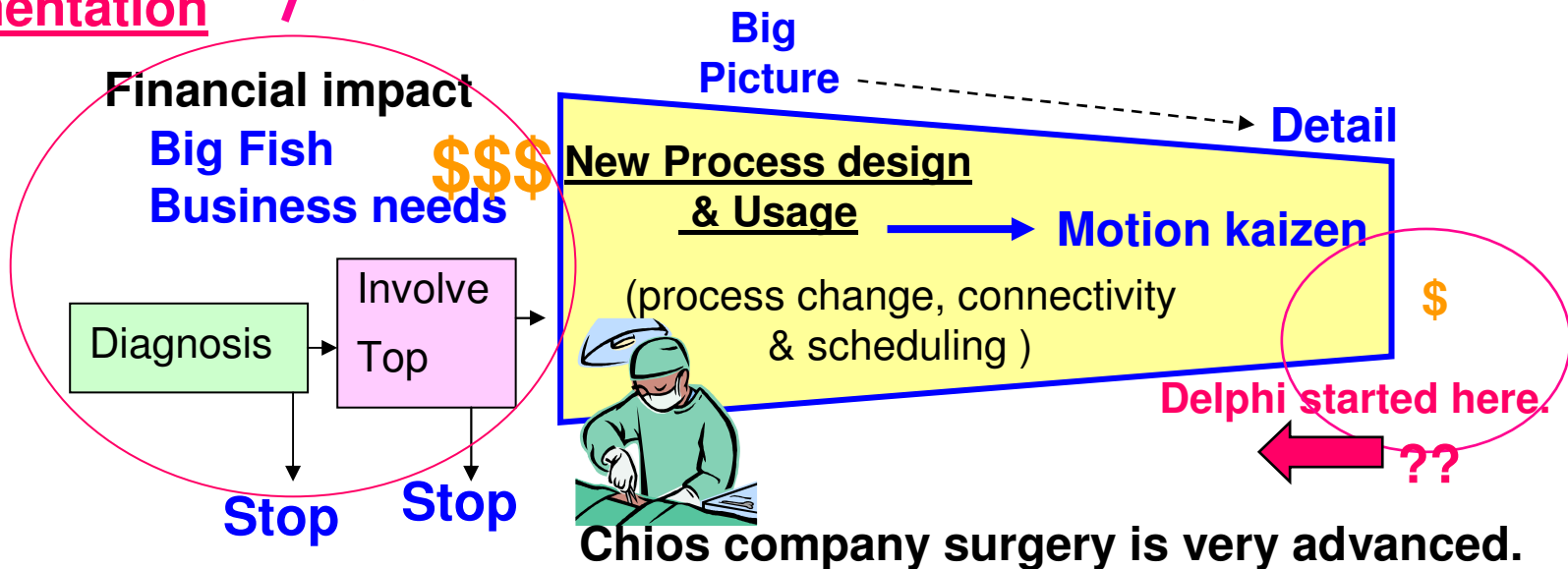


**Lean Traditional Education steps**



High level Lean Implementer

**Lean Implementation steps**



Chios company surgery is very advanced.

# Recommendation : Logical Lean Enterprise approach

1. **Top Leadership lead ,One consensus**
2. **Vision** .....(Example) :**Dairy BTO** based on **products architecture**
3. **Fix Prerequisite** ....**3 issues**: Quality problem, Down time,  
Change over time etc use Lean Tool & method.
3. Develop and introduce **new Lean Tool, Method** ( If necessary)
4. **Create new in-plantable system**. ( If necessary)
5. **Lean surgery** ( If necessary)



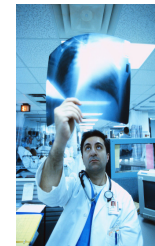
- **New Leadership , mind Re-set( set Ownership)**
- **Should be Finished Manufacturing, Logistics first.**  
( Reason? : We can open the unsolved , leaked problems based on Fact.  
and, we can push up to up front.)
- **Create Total vision, New business model development ( Designer)**
- **Create Logical Treatment steps ( General Doctor)**
- **Conduct Medical Surgery ( Surgeon)**

# Role of sensei? : General and Chief doctor.



## Required skill? ...Able to....

- Convince Top ,get a engagement, with Credibility.
- **Create Vision** (Design business model & process)  
( based on Business type, products architecture)
- **Diagnosis Skill** ( define the sickness)
- Create **Treatment plan** with right priority
- Conduct all preparations , no mistake
- Create new **in-plantable** system ( Creative skill)
- Accomplish **Medical surgery practically.**
- **Get the final business impact**



**Select right Doctor as a Chief Doctor, create one direction.**

# Fin