

*All for Healthcare INNOVATION  
By work-style innovation for All*



TOCICO 2014 Conference

**OMRON HEALTHCARE Co., LTD.**

**Presented By: Masataka Kitagaki production strategy HQ production  
strategy department GM**

**Date: 11<sup>th</sup> June 2014**

# About OMRON Group

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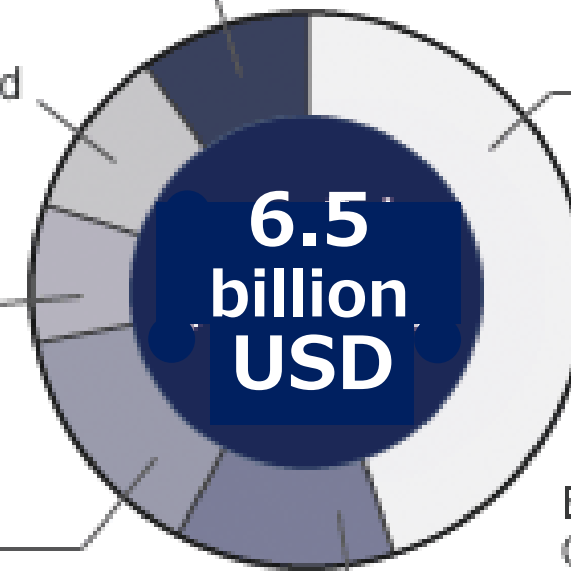


Other (including elimination and corporate) 10%

Healthcare Business  
(Medical equipment and  
services) 11%

Social Systems  
Business  
(Transportation,  
Security) 11%

Automotive Electronic  
Components Business  
(Automotive electronic  
equipment) 15%



Industrial Automation  
Business (Control  
equipment, FA systems)  
40%

Electronic and Mechanical  
Components Business  
(Electronic and mechanical  
components) 13%



# OMRON HEALTHCARE Co., Ltd

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Head Office	53, Kunotsubo, Terado-cho, Muko, Kyoto 617-0002 Japan
Sales	890 mil/USD by March 2014
Major Operations	Development and sales of health equipment for home and medical use Development and sales of health management software Health promotion services
Employees	4,402 (830 in Japan,3,572 in overseas/ as of March 13)
Production Sites	3 (Matsusaka, Mie, Japan; Dalian, China; Binh Duong, Vietnam)
Research and Development Sites	2 (Kyoto, Japan; Dalian, China)
Domestic Offices	8 (Sapporo, Sendai, Tokyo, Nagoya, Osaka, Hiroshima, Matsuyama, Fukuoka)
Overseas Offices (corporate bodies)	15 (USA, Mexico, Brazil Netherlands, Germany, UK, France, Singapore, India, Thailand, Indonesia, Bangladesh, China, Taiwan, Korea)



# Omron Healthcare Group Management Philosophy

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Maintaining good health is a universal and timeless desire of people worldwide, a fact that has remained unchanged through the ages.

Omron Healthcare has produced a steady stream of innovative products and services that help healthy people prevent illness and stay fit. If they are affected by a disease, we aim to help slow the progression of symptoms.

To allow people to easily access a healthcare device whenever needed, no matter where they are. To make health more accessible for everyone in the world.

All for Healthcare

We will continue taking on the challenge of creating a world in which these things are possible.

## **Omron Healthcare Group Management Philosophy**

### **<Our Mission>**

**To help realize healthy and comfortable lives for people around the world**

### **<Fundamental Policy>**

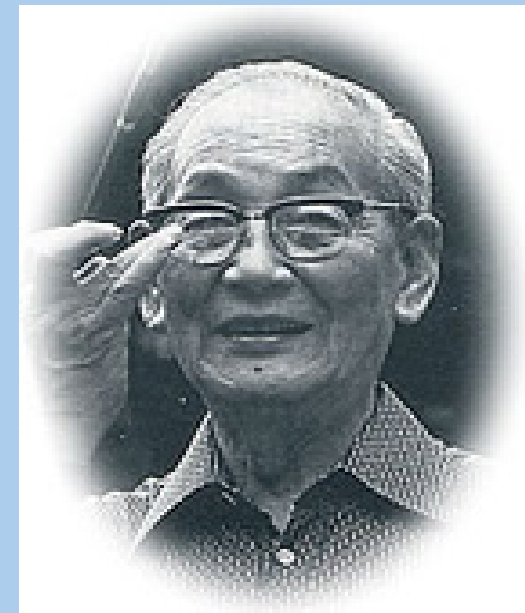
**Providing the World's Best Quality**

### **<Operation Policy>**

**Customer-oriented business operation**

**Challenging spirit**

**Creation of free and open-minded corporate culture**



# Product line up

From home to medical institutions, Omron provides healthcare equipment widely in three business domains of "lifestyle-related disease", "pulmonary problems" and "health enhancement".

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Tooth brush



Blood pressure monitor



Thermometer



Pedometer



Form Non-invasive vascular screening device



Visceral fat measurement apparatus



Blood pressure pulse wave inspection apparatus AI



Spot check monitor



Low freq. wave treatment machine



Body composition monitor



Blood glucose meter



Sleep meter



Nebulizer



Patient monitor



Portable pulse monitor



Medical Blood pressure monitor

Home Use

Medical Use

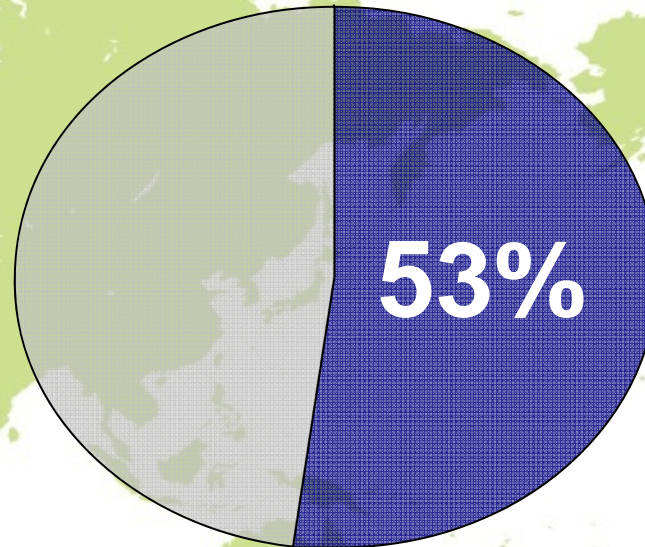


# Blood pressure monitor business as Global No.1

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**Global market share = 53% (value)**

Arm type



Wrist type



# Long-term Business Plan 2011~2020

## -Two wheels toward winning-

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- Back to starting point-

VG2020  
Slogan

# *All for Healthcare INNOVATION*

- Value innovation -

**Challenge creating social  
needs to realize blue ocean**

- Process innovation -

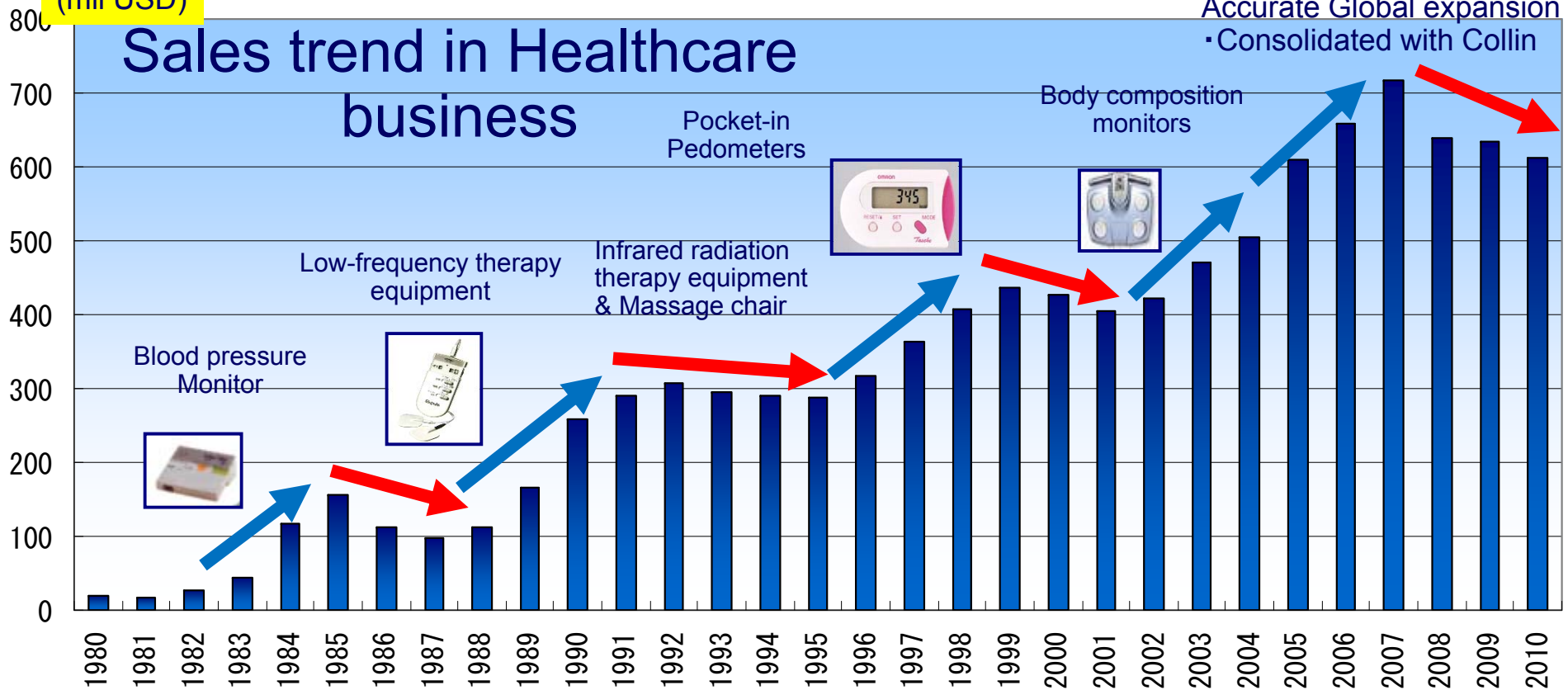
**Realize excellent operation  
to win in red ocean**

# OHQ has grown by creating new value

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(mil USD)

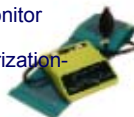
## Sales trend in Healthcare business



■ 1978  
HEM-77 was released as the first Home Digital Blood pressure Monitor



■ 1981  
HEM-68 was released as the first home automatic Blood pressure Monitor  
(Automatic pressurization-decompression)



■ 1985  
HEM-700C was released as The first oscillometric Blood pressure



■ 1991  
Fuzzy technology to optimize the pressure  
HEM-706 (pressurization by estimation of maximal pressure)

■ 2000  
Fit cuff HEM-770 A was released

■ 2004  
HEM-1000 was released which is Home automatic Blood pressure Monitor by measuring upper arms.





# Business environment (in 2010)

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Positive factors in Business environment surrounding OMRON

## Positive Factors

- People prefer healthier life
- Demand to slow down the increase of medical related costs
- Collapsed Social Security system → Increase the consciousness of self-healthcare
- Huge potential of the emerging markets

**Be a winner by strengthening the competitiveness**

Product/R&D

×

Low production  
fixed cost

×

Variety of channels  
all over the world

# Business environment and dilemma

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## R&D

## Production

## Sales

Business environment

Pressure of increasing product development cost  
Necessity of actions to expanding emerging market

Significant labor cost increase in emerging country.  
Technology innovation

Forced to enter the price competition to get SOM (Share Of Market)



Invest for R&D

Invest for future

Reduce price



Not increase R&D expense

Reduce cost

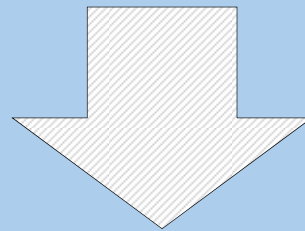
Not reduce price

Dilemma after Lehman crisis

# Sense of Crisis

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- **Can we survive in such an ever-changing market with the strategy to expand the current strength?**
- **Do we need to get a new strength to survive ?**



**We need  
“Holistic Management Innovation”**

# Focus on the constraint of the whole

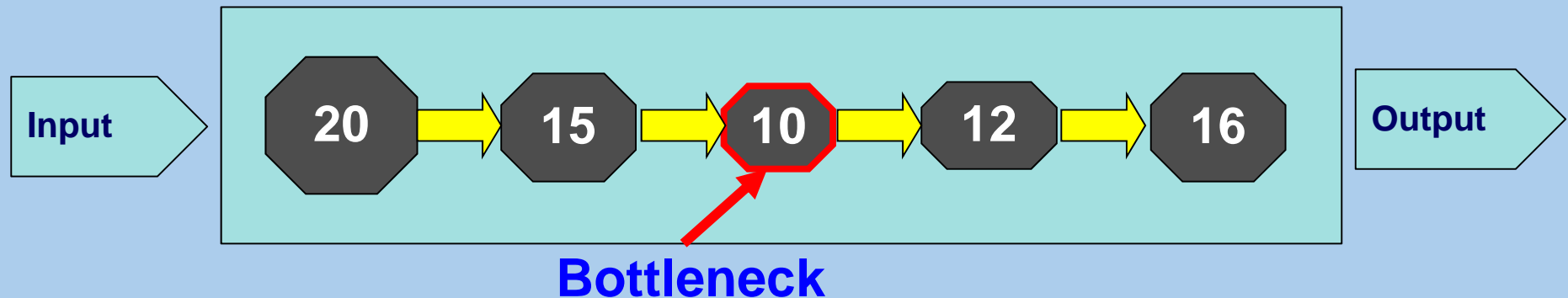
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## TOC: Theory Of Constraints

Developed by Eli Goldratt  
Hard science based on physics



**It is holistic to focus on the constraint of the whole.  
TOC (Theory Of Constraint)**



**To concentrate your power on non-constraints is wasteful.  
Focus = Not to do**

# ■ Start with...

## Holistic management workshop on March, 2010

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~All management from every function (Sales, production, R&D, IT, Finance, logistics) participated





# June, 4<sup>th</sup> 2010 at Goldratt House in Israel

Look at this graph!

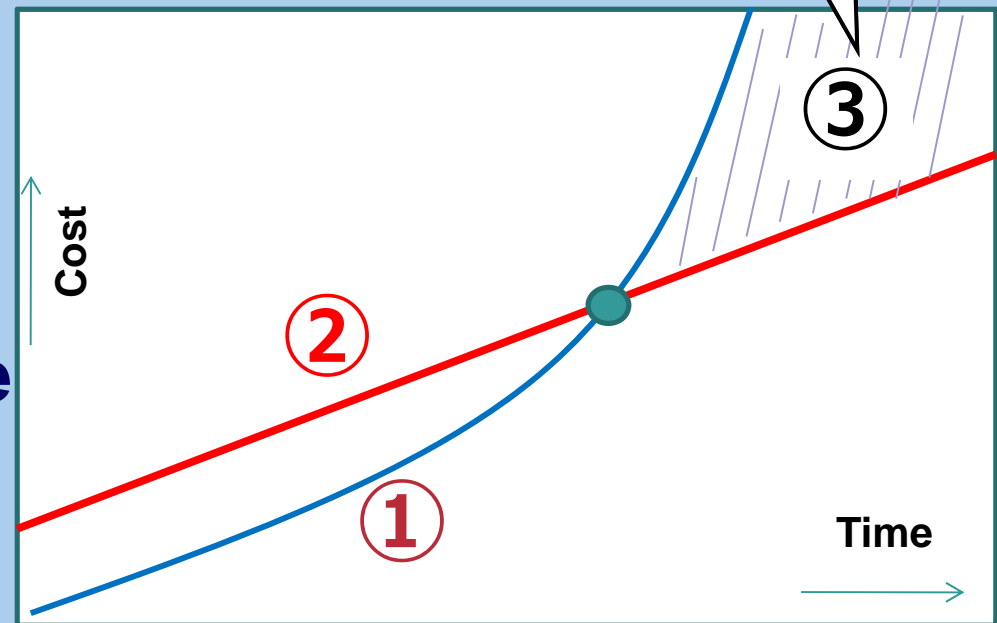


# The chart Dr. Goldratt illustrated

- ① Medical cost rising at an exponential rate
  - Costly advanced medical care
  - Increased aging of the population
  - A rich and varied diet lead to an increase in **lifestyle diseases**
- ② **There is a limit for national medical budget**
  - **Huge debate about costly medical care in many countries**
- ③ Area: Time not to take medical care

Our mission is to prevent the collapse of health care system in the world

**Medical cost is in the trillions-dollars range**

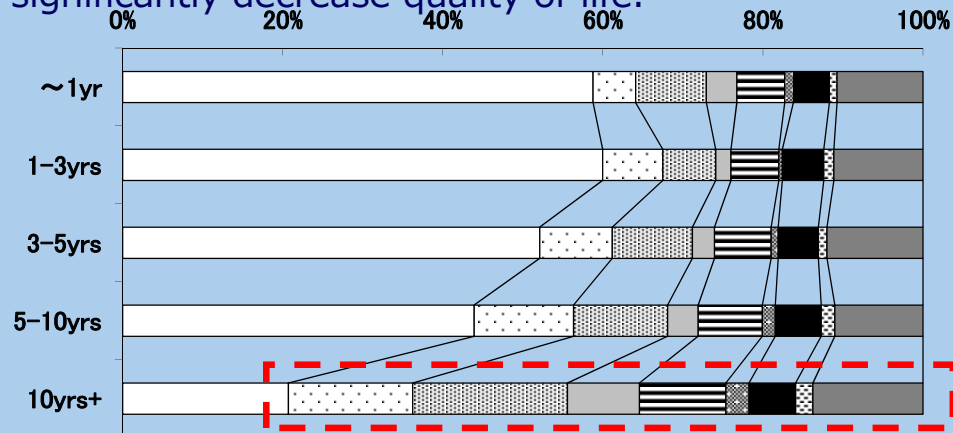


# For example, fear of diabetes

- ① It will progress to the development of complication without noticing any subjective symptoms at all
- ② In a couple of years after the onset, he or she will suffer complications.
- ③ Diabetes complication will significantly decrease quality of life.

**Fear ①**  
Become advance without noticing

Silent killer



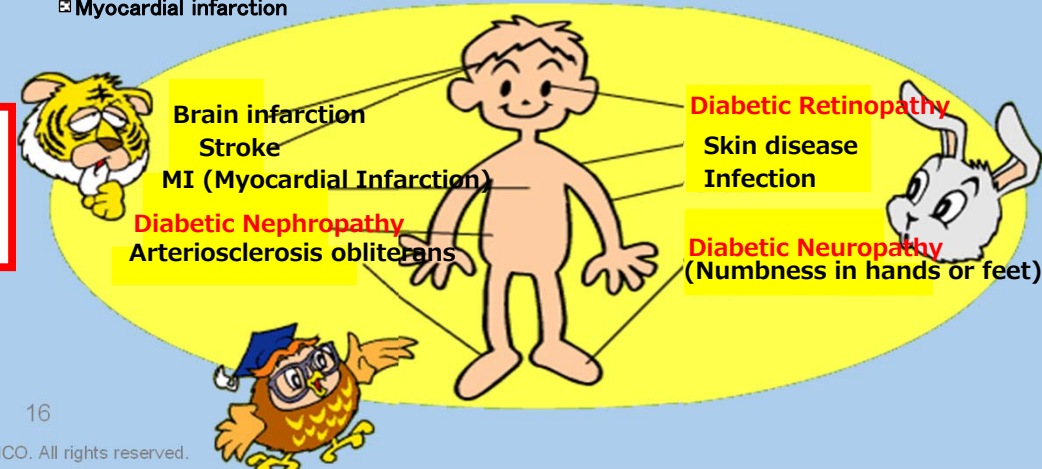
**Fear ②**  
The complications onset rate is 80%, after 10years of contracting a disease,

No cure

- No complication
- ▨ DMretinopathy
- ▨ DMnephropathy (no dialysis)
- Angina
- ▨ Brain infarction
- DM nerve damage
- ▨ DMnephropathy (with dialysis)
- ▨ DMdiabetic Foot
- ▨ Myocardial infarction

**Fear ③**  
Lower QOL with diabetes complications

Dialysis, Blindness, Gangrene



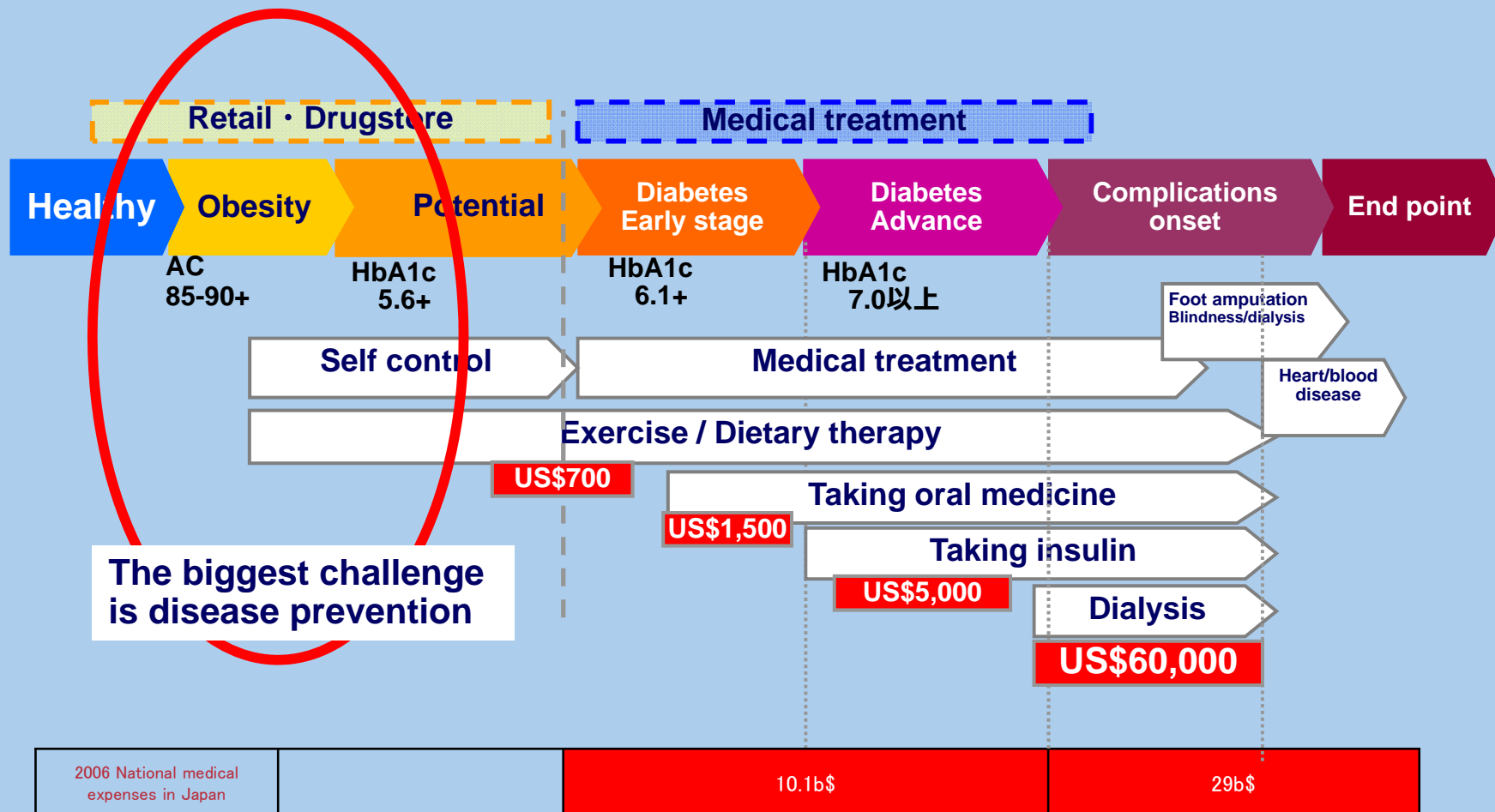
# Diabetes Medical expense

Medical expenses for Diabetes with dialysis: US\$60,000/person/year

Total medical cost for Diabetes : US\$40b

Need to stop aggravation of diabetes

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The biggest challenge is disease prevention

2006 National medical expenses in Japan

10.1b\$

29b\$



# Diabetes increase worldwide

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Worldwide increase of diabetes patients is expected.

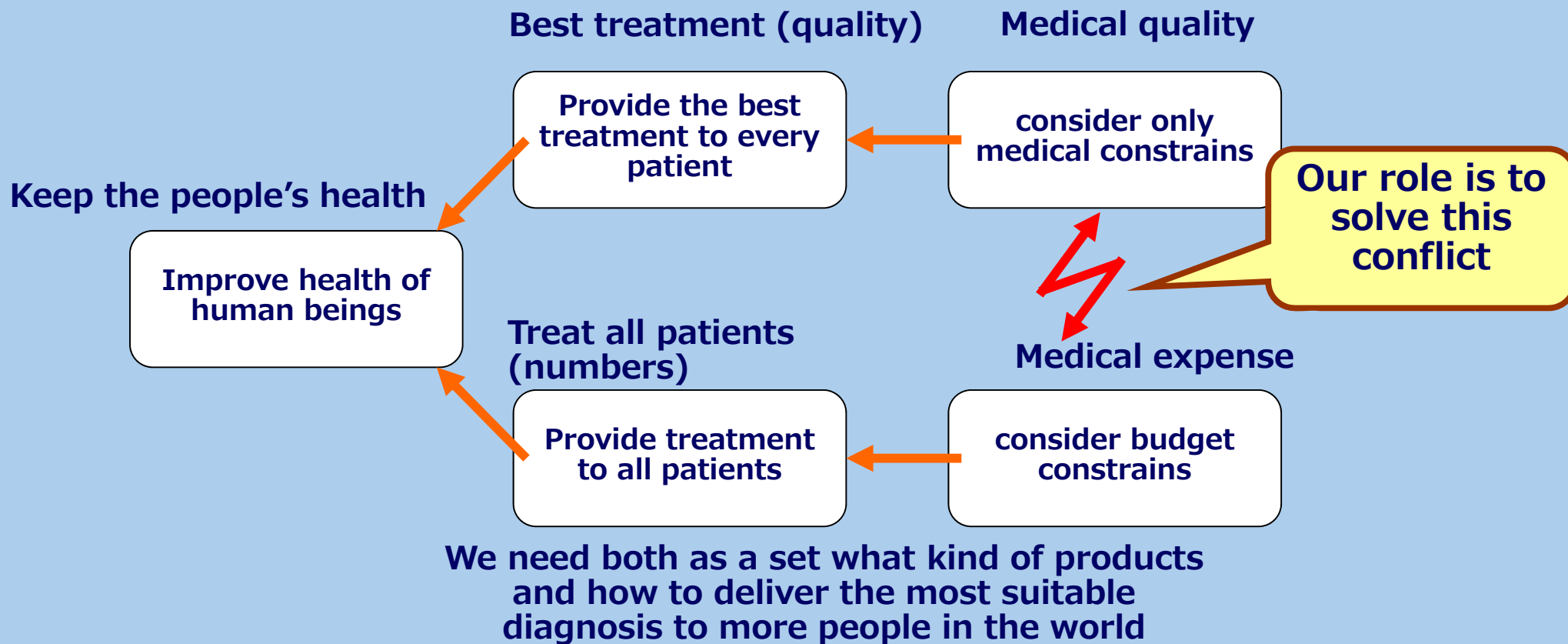
Especially in Developing countries, the number of potential diabetes increase rapidly. It increases the need to deal with this problem.





# Medical treatment Conflict

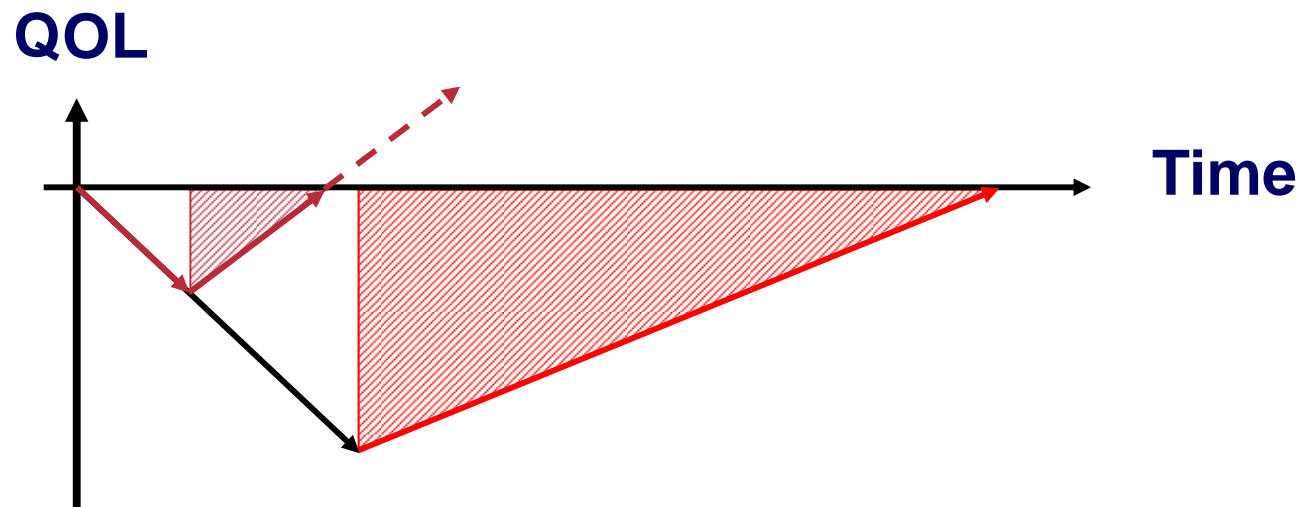
- If there is a need that is not satisfied with, there will be a conflict
- Every patient cannot be treated sufficiently
- Conflict in Medical treatment



# Solving Conflict

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- Left untreated means more time to recover.
- Therefore it's necessary to find out early and take care as quickly as possible.
- Improve QOL even more.



# Market education

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We educate market where healthcare products are not penetrating well.

## Question!

Is it correct you measure blood pressure when you are ill?



**TV commercial in India**



# Now, real challenge to realize our mission

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July 2010 The activity start of "changing how to work" was carried out at the watchword.

## ■ Inventory into half

Sales/day × (Touch Time + Logistic time)

Reduce L/T by removing waiting time

MTA : Make to Availability

Cash is needed for NEW HQ building  
and new market development

## ■ Eliminate BMT/ Clear target

CCPM : Critical Chain Project Management

Our rivals intent working on  
weekend and over time,  
but we must change  
how to work

## ■ Strengthen Product planning

Creation of sharp up goods

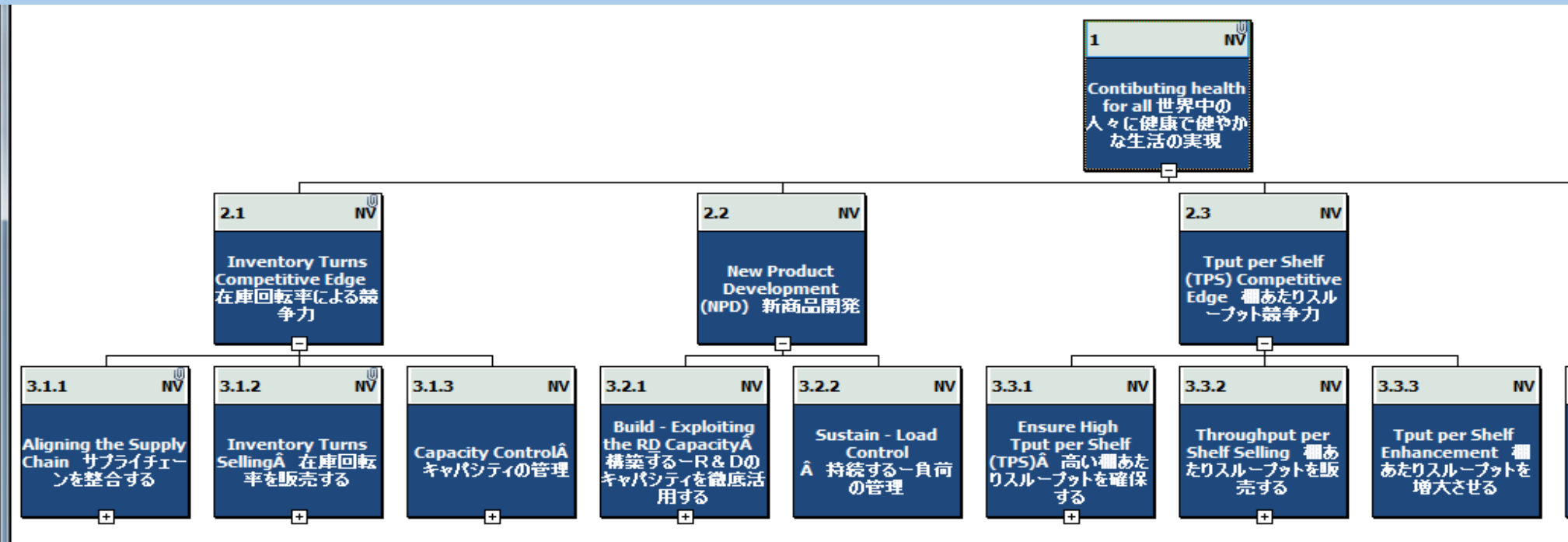
Analyze (passed) → Think ( future)

Competitor→Client

Wow! Product can't be created by  
analyzing experience and competitors

# S&T Tree for consumer goods

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# R&D center

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We create a new value through our biological information sensing technology and abundant pool of clinical data



# Critical Chain Project Management

CCPM work shop was held with 120 participants

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# 1st Step

At the beginning, 427 projects were under way

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427 project

25 project

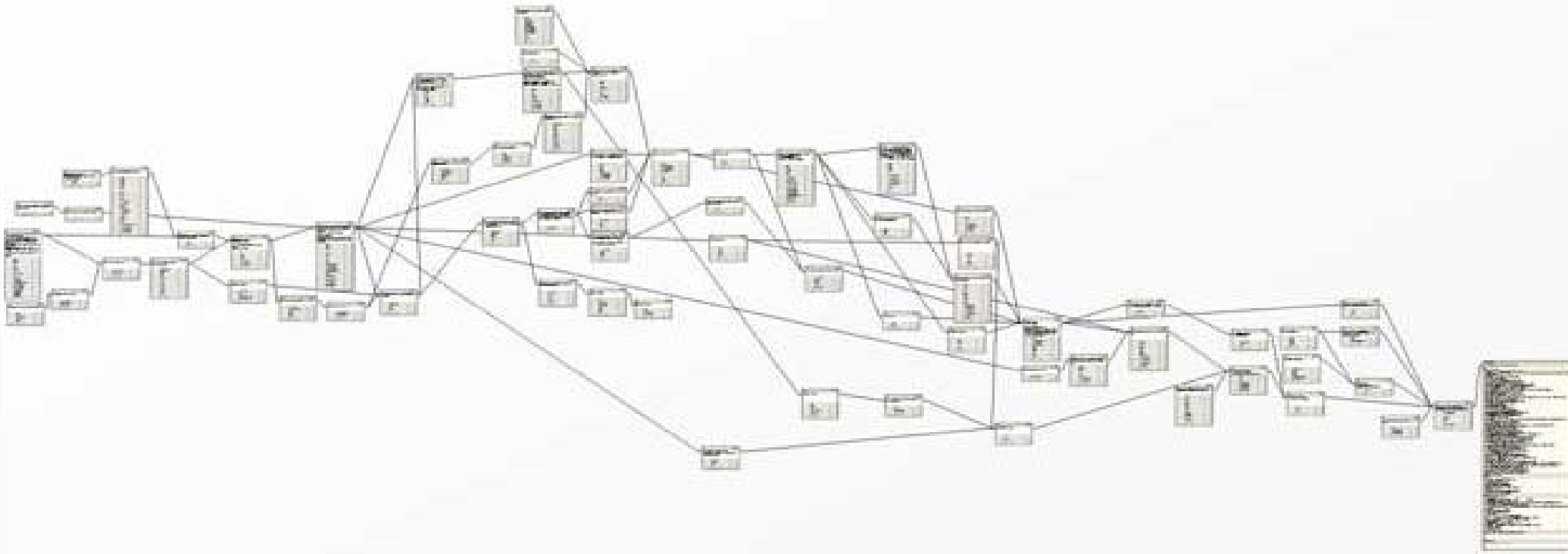
The first step is to decide “Not to do”.  
Then we focus on the themes by sharing the goal and the process through ODSC, and utilize implicit knowledge of skilled members.



## 2<sup>nd</sup> Step

- Share the goal with other related departments
- Generate the process together with stakeholders to achieve the goal

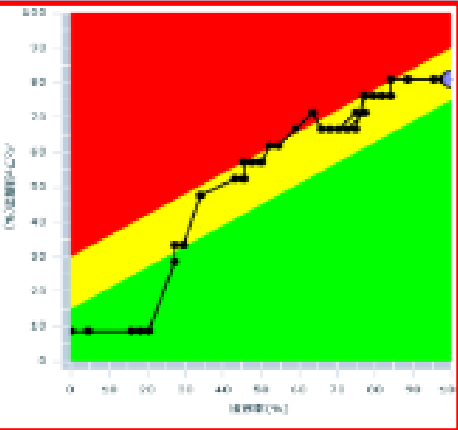
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**Let share the implicit knowledge  
of skilled, experienced members**

# 3<sup>rd</sup> Step Progress Management

Confirm the ongoing process by asking questions  
Understand the status quo by asking questions and think what you should do.



- Daily confirmation of on going process
  - using the chart. Focus on the red .

- Questions from top management
  - Is there anything I can do to help?

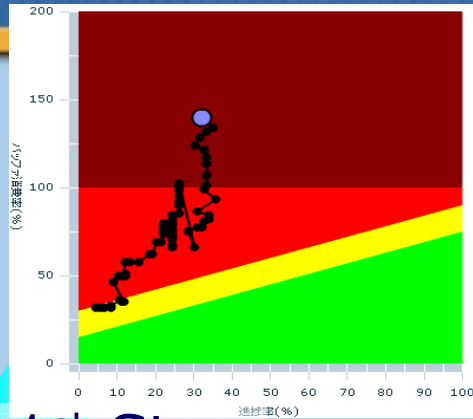
- Questions from managers
  - Is there anything I can do to help?

- Questions from the leader
  - How many days we have left?
    - >> train to make a good estimation
  - What is the problems if any?
    - >> Train to foresee unknown risks
  - What can I do to help?
    - >> Train to let the members think

Let them  
think  
by asking  
questions

# Finding out problems and solutions, step by step

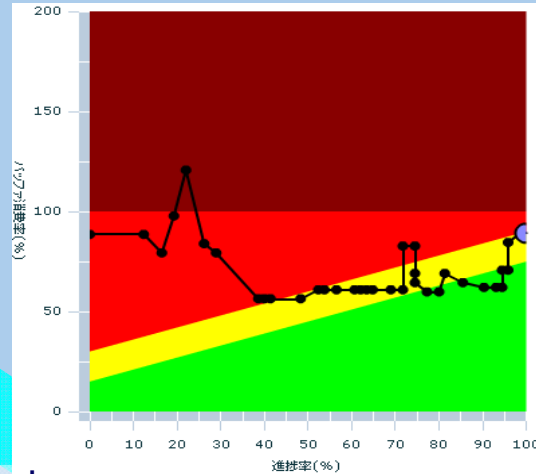
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1<sup>st</sup> Step

Problem: Slow flow from technical to products development

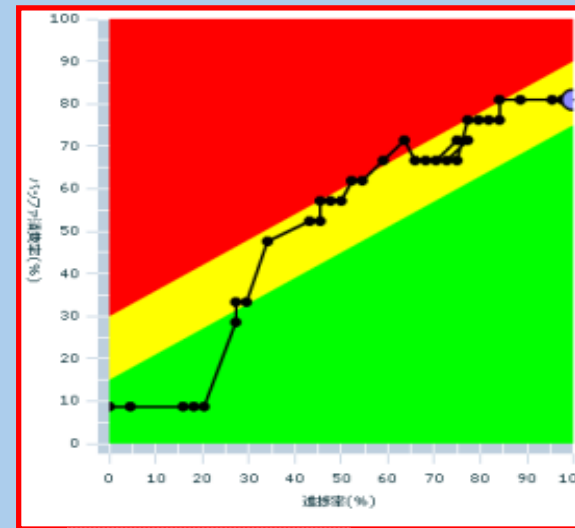
Solution: Full-Kit + virtual catalogue



2<sup>nd</sup> Step

Problem: cannot change the status quo

Solution: Managerial control of buffer

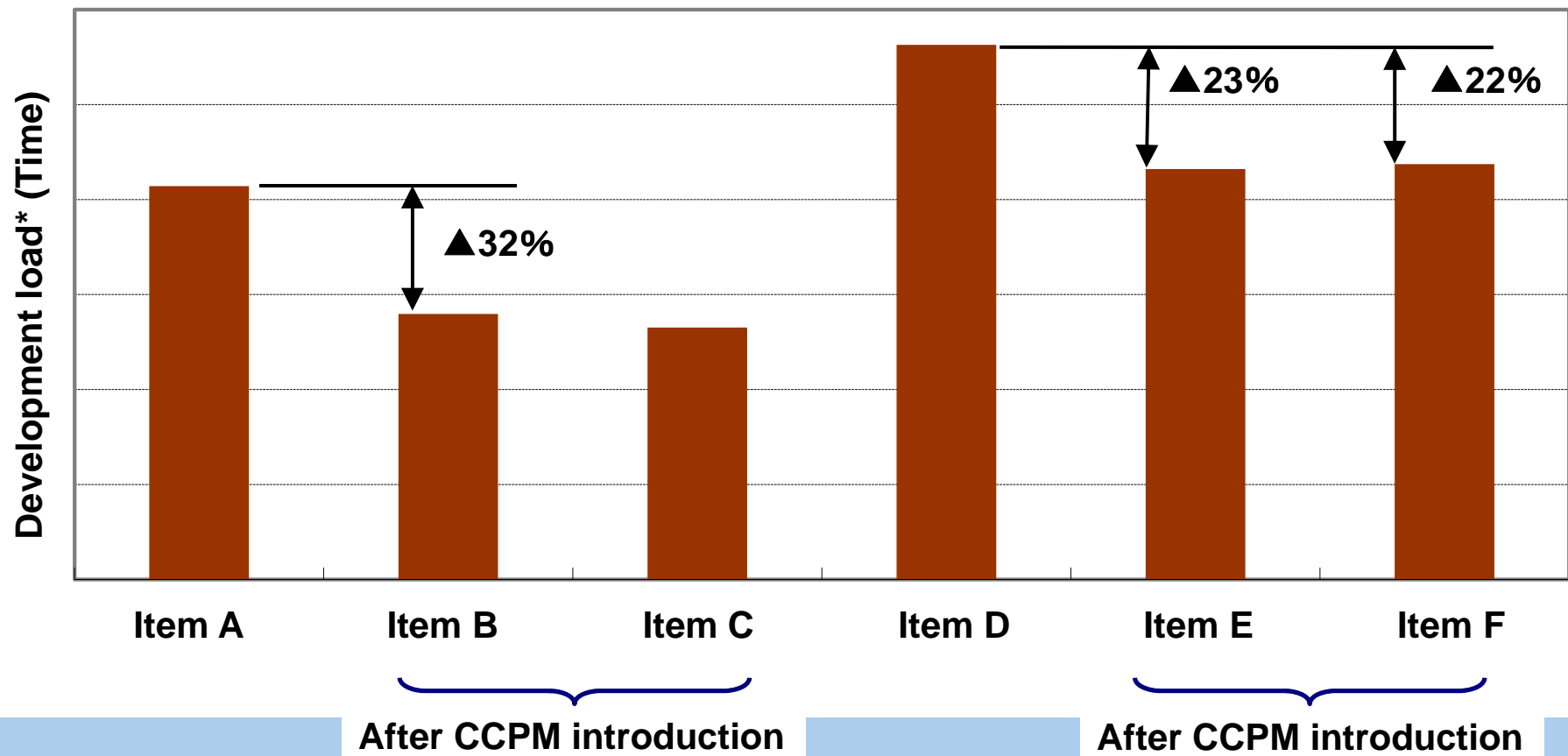


3<sup>rd</sup> Step



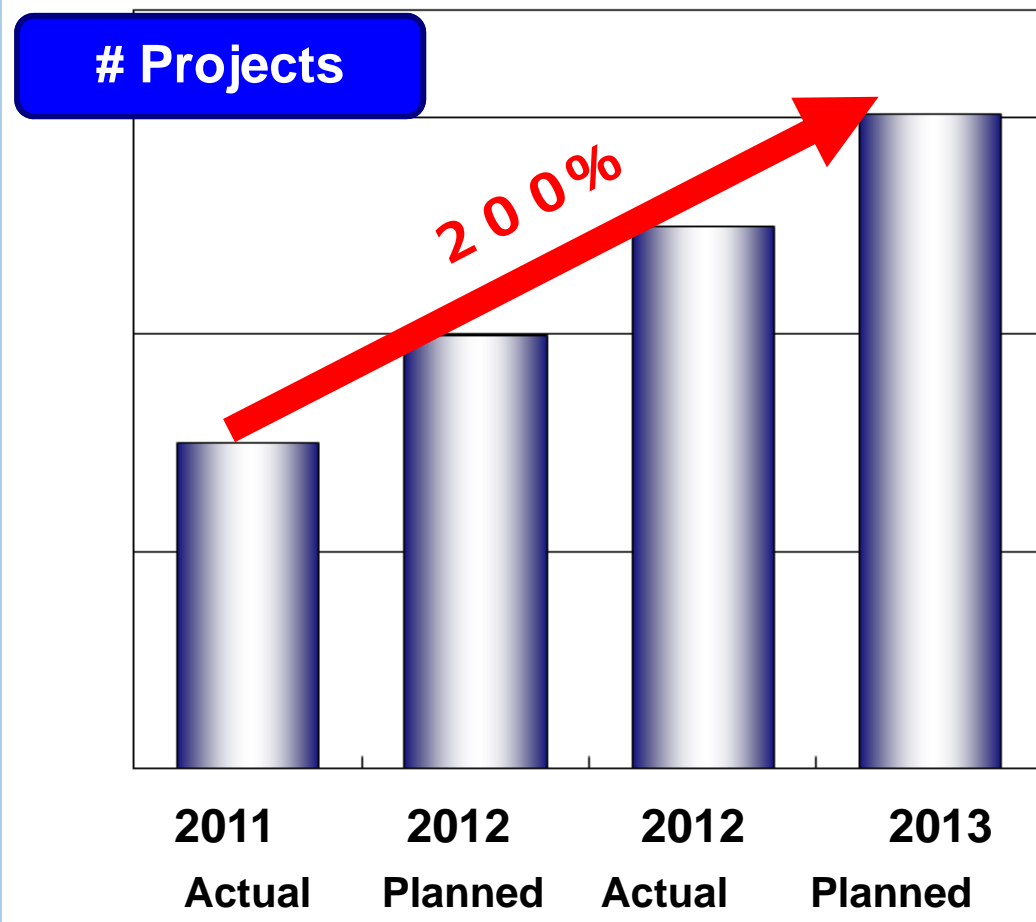
# The performance from the 3rd step

The time took for the development has surely decreased after introducing CCPM. The effects emerge little by little. If we can sustain this, it will lead to increase in throughput.



# Product development budgets and the number of development projects

The number of development projects has increased without increasing development budget



# Changes assumption

We changed “assumptions”. That is the difference between past initiatives and TOC

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FROM	TO
More KAIZEN activities, more results	It is people who does the activities. Without focus, we don't achieve results.
In order to minimize risks, we should define tasks into fine details and manage them	Development surely has uncertainty. In order to address risks and deliver on time, buffer is the must.
Earlier we start projects, earlier finish them	Earlier start does not necessarily warrant earlier finish
Unless start early, we cannot deliver on time	Without sharing objectives with all the stakeholders and creating project network, we cannot deliver on time
If we manage the completion of project tasks, the project makes progress	We cannot change past. Project makes progress if we focus our management efforts into the future tasks
Checking quality by design review will help to increase quality and to make progress in development	Focusing on making better flow and reducing jams will lead to better quality and faster and smoother progress in development
Delay is bad	There are good delays and bad delays Good delay ; One caused by uncertainty Bad delay ; One that could be avoided by preparation

# Manufacturing sites

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We provide medical-device quality products  
inexpensive, faster and globally

CHINA



JAPAN



VIETNAM



# OMRON TPS and MTA

Toward global MTA Implementation from 2014 onward

1986 - 2002  
Production innovation in Japan

In 2005, our plant appeared on NIKKEI strategy journal as a "successful case in implementing TPS overseas"

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1973  
The first electronic blood pressure machine from OMRON



1972  
MC-320  
Electronic thermometer



1984  
Sales exceeded 100M USD

1980

1983  
A Big hit of MC-10



1990

1993  
The first China production site, OMD



2006  
DNPS KANBAN

2000

2007  
The first Vietnam production site, OHV

2010  
Introduced MTA to OMD

2012  
Introduced MTA to OHV

2013  
Introduced MTA to OHZ

2014

2013 - 2015  
Transition of three major global site production by MTA

1993 - 2012  
Expansion of overseas production



# Workshop with production team

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# Workshop with sales team

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# Getting out from vicious circle of “demand forecast is out”

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Opportunity & Profit loss

**Fast Runner**

Out of Stock

Cash and shelf space decrease

Return goods

Discount incentive

Inventory turn goes down

**Retail attention**

Shift to MTA, demand driven replenishment production

and the vicious cycle.

**No sales**

Too few product

Too many product

Miss forecast of demand

**Reduce Cost!**

Long replenishment time

Cost reduction request

Sales who does not like big order is rare

Big volume can get discount

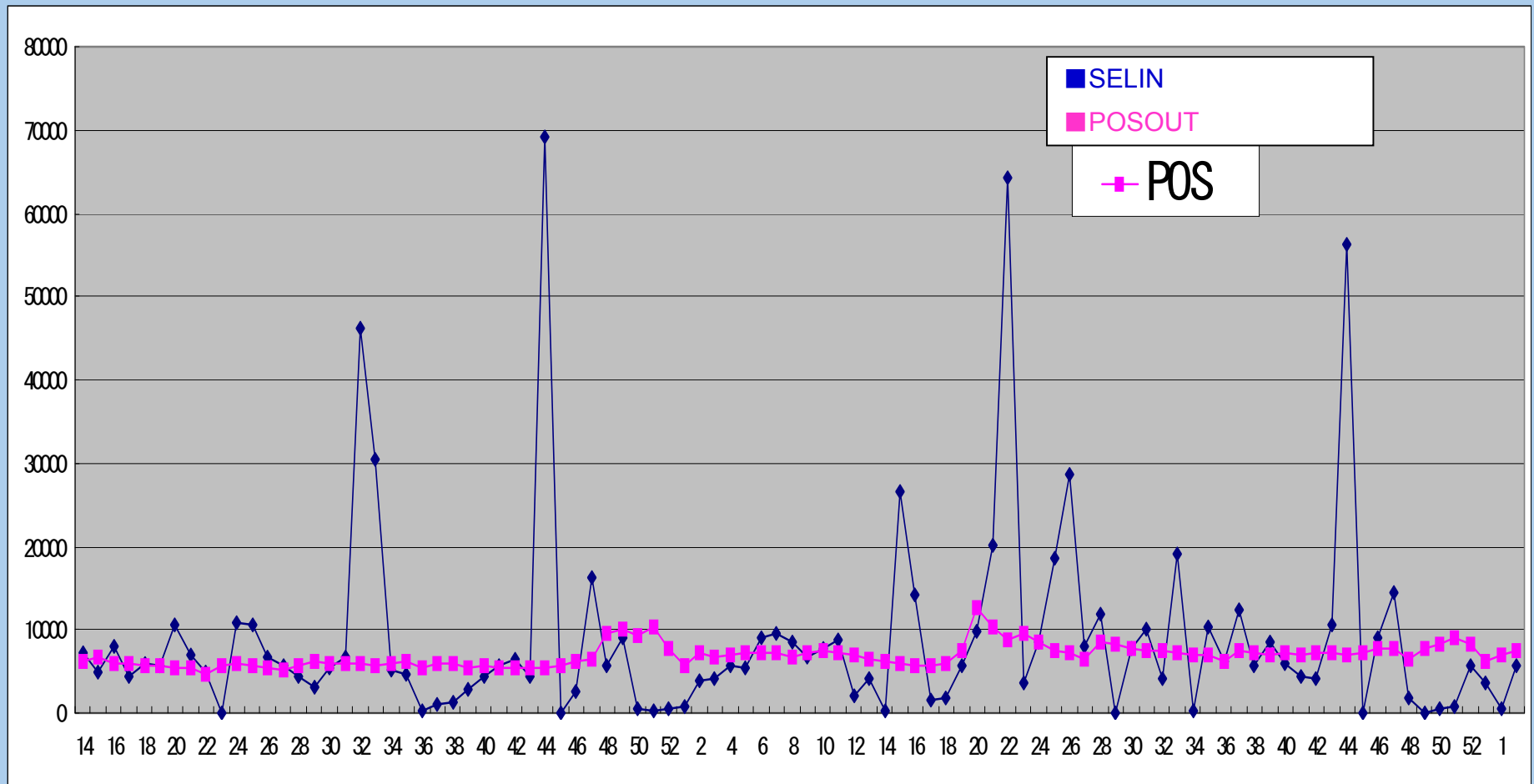
37  
O. All right



# Consumption of market is stable

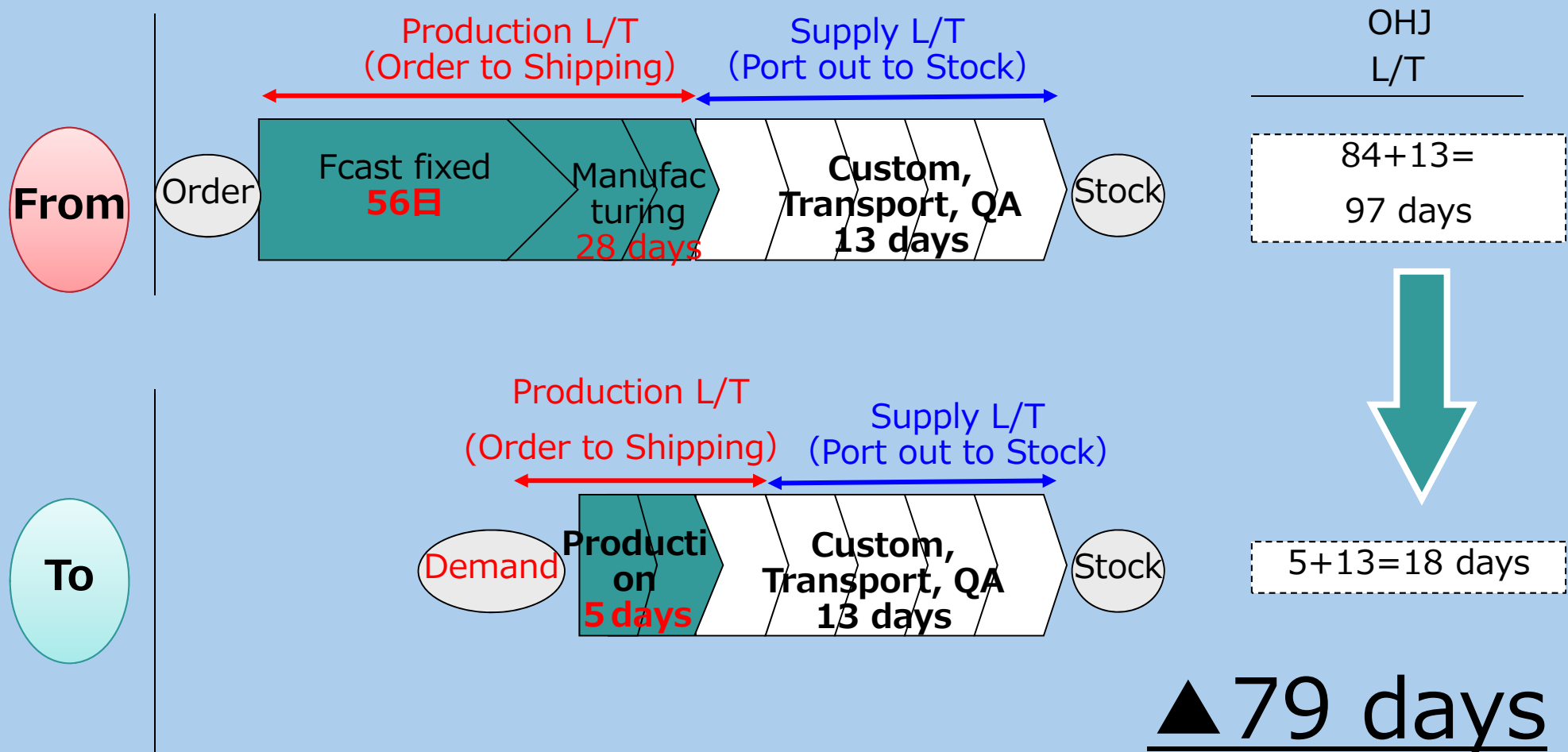
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## Actual POS data and Sell In of a company (HEM-741)



# Reduction of supply from production (OMD/china factory and Japan sales)

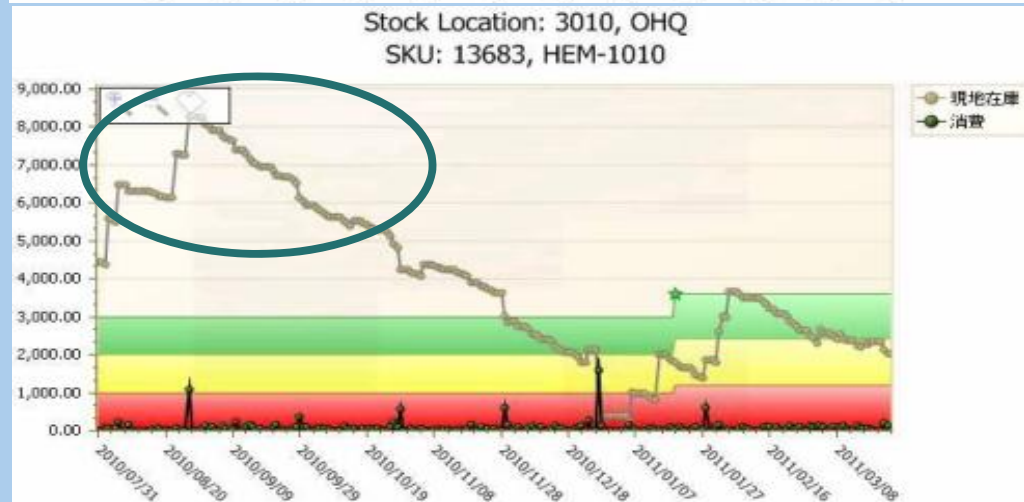
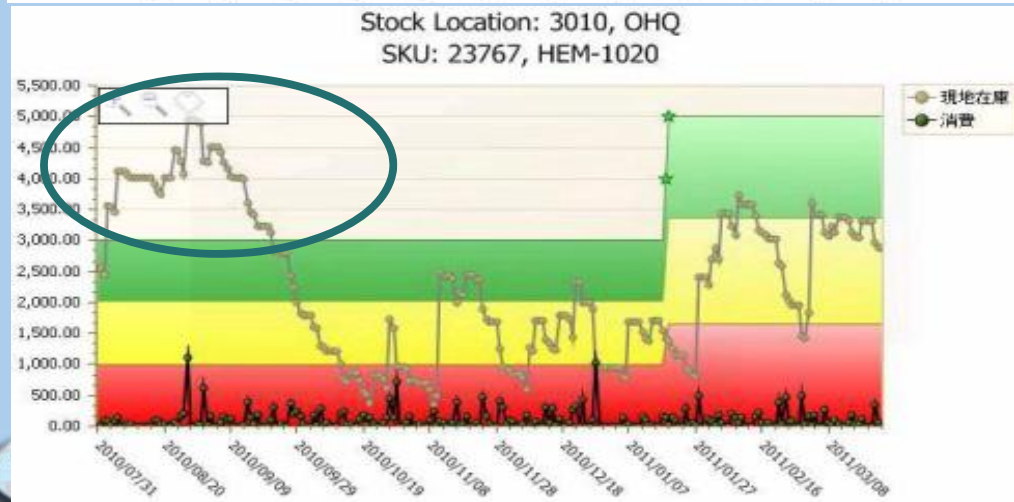
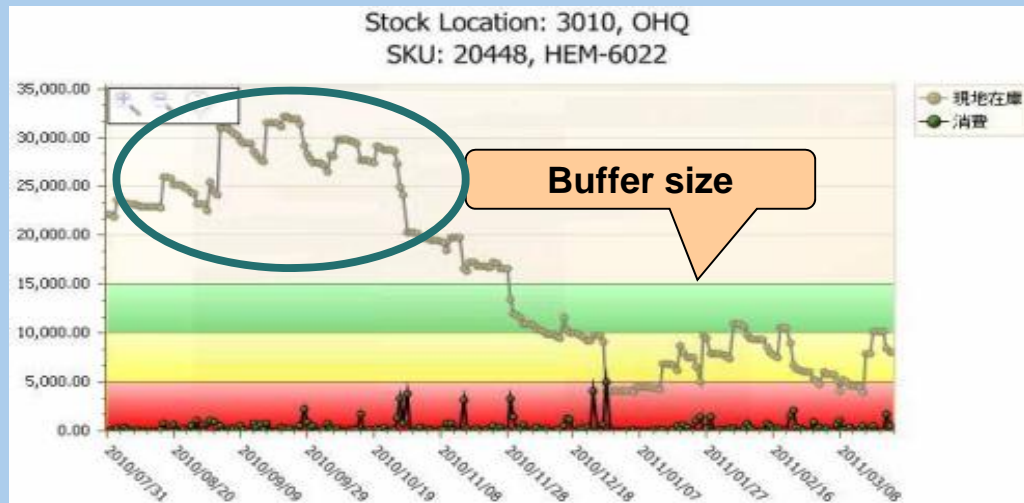
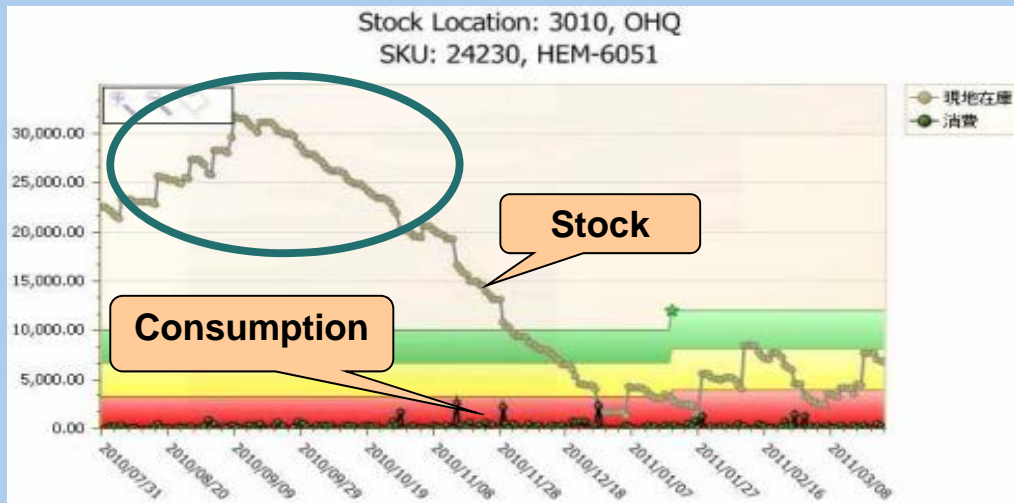
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# Demand driven replenishment production started

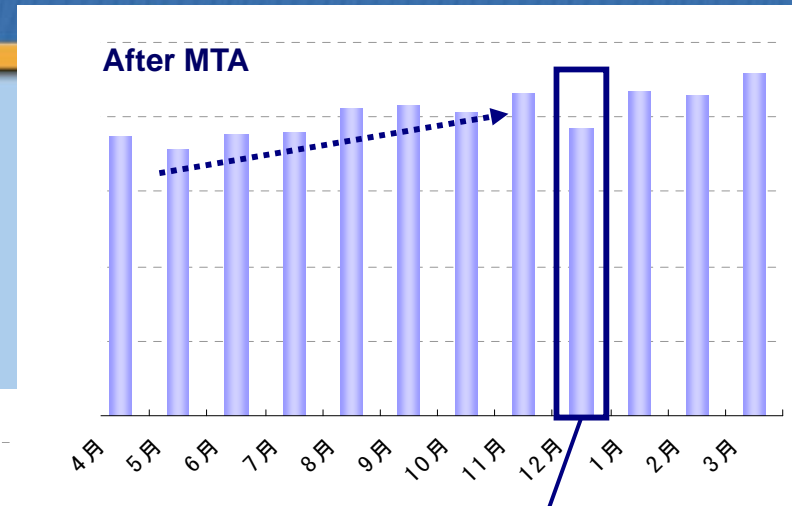
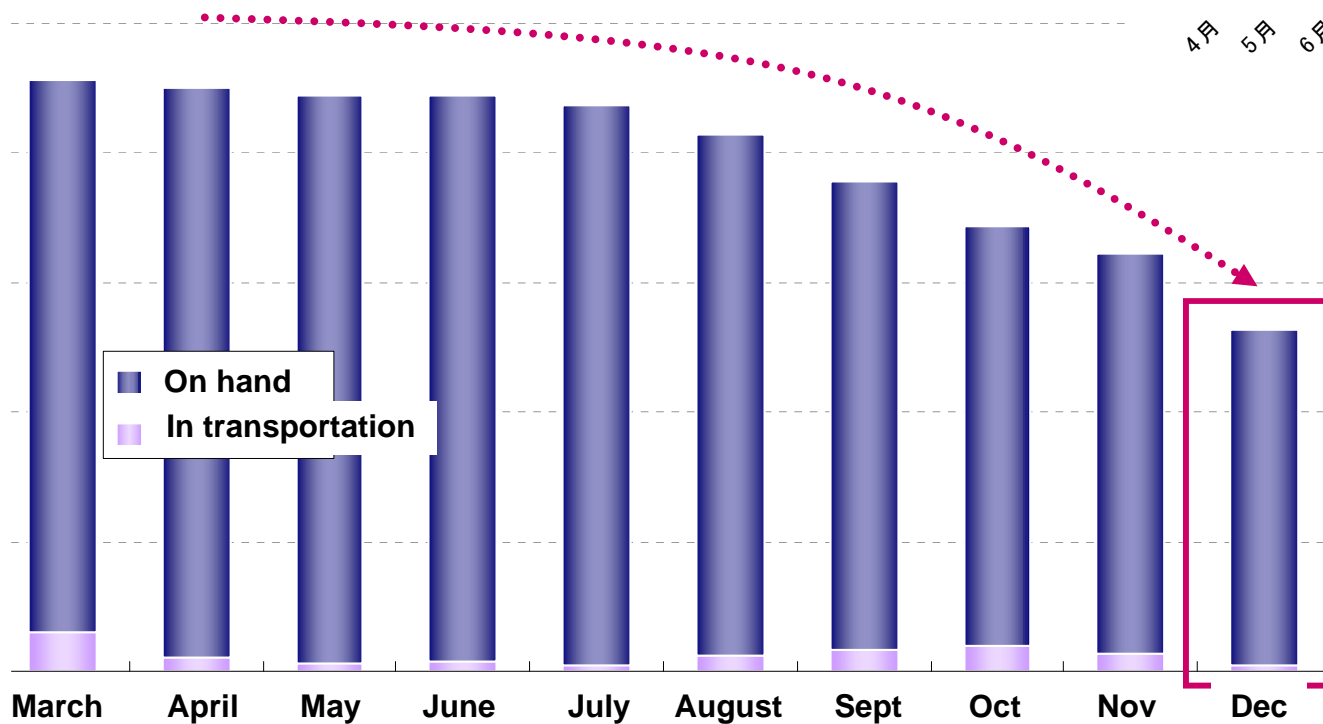
When replenishment started there were large stock of finish goods, and in many cases activity started stopping production line as the first step



# Stock reduced after MTA (Japan sales)

After MTA, sales stock reduced dramatically

After MTA implementation (Stock of Japan sales)



-32% from previous month

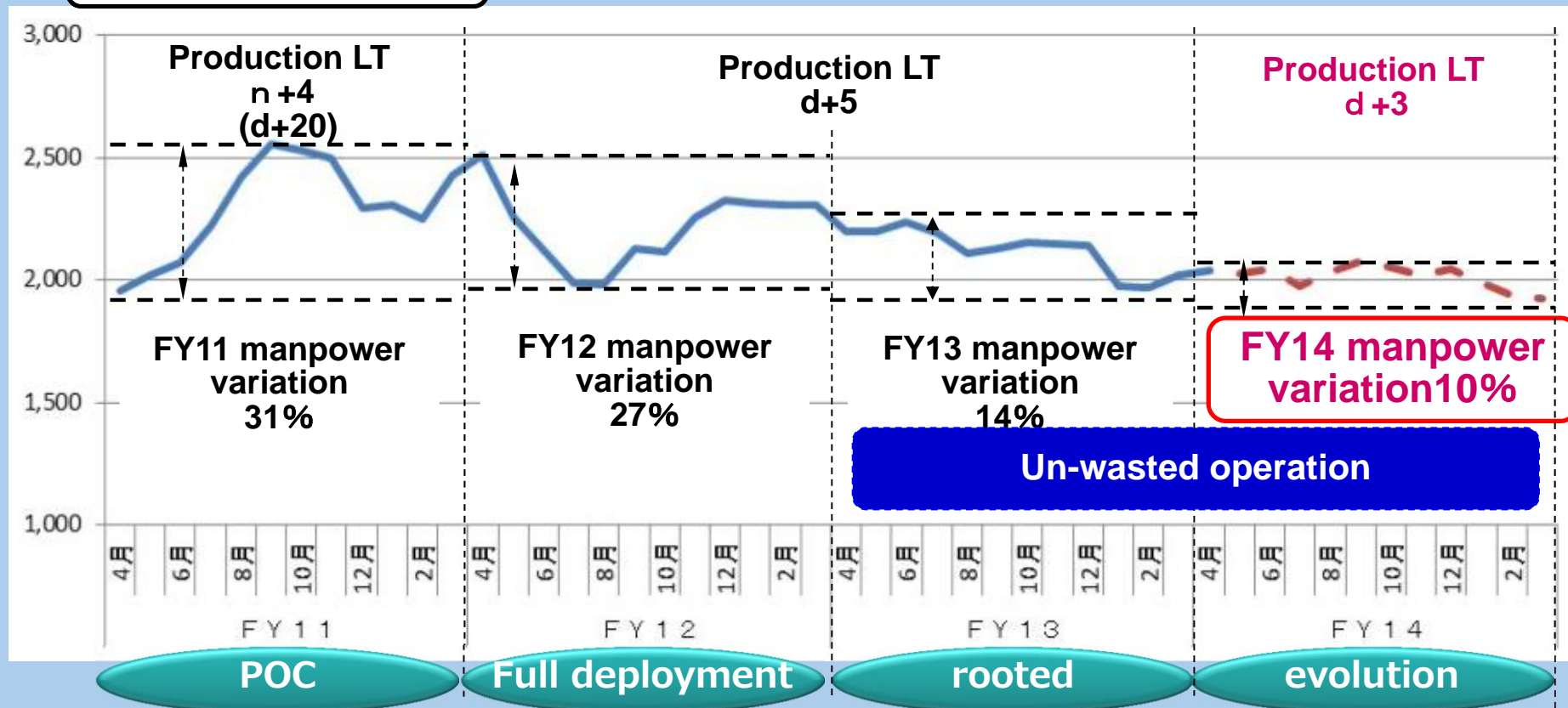


# Variation of manpower(OMD)

Production lead time is 3 days (-85%) and variation of input manpower became within 10% (-67%)

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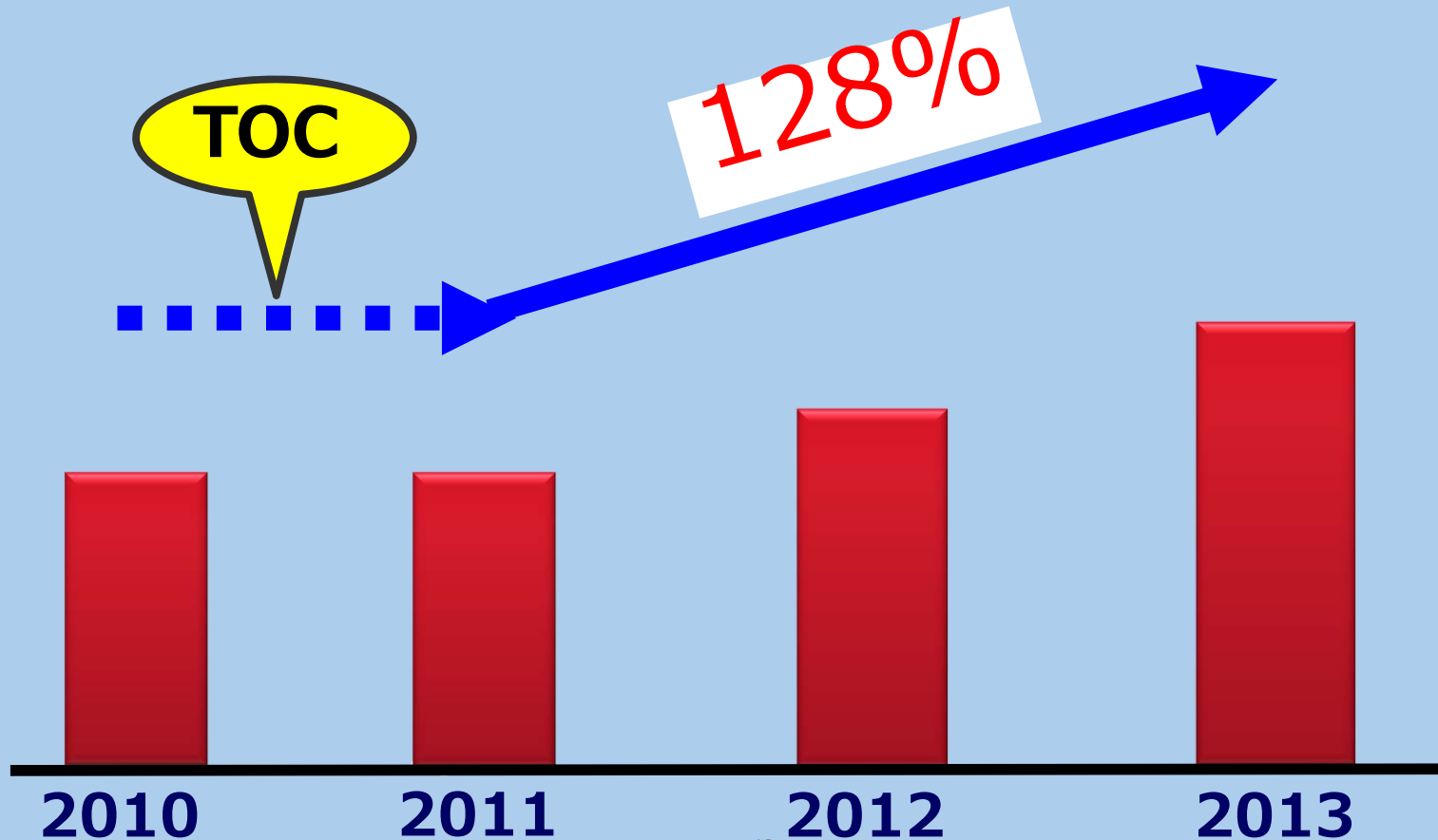
Direct labor manpower trend in OMD



# Productivity improvement by MTA

capacity has increased without major investment

Production output per person



# What assumptions have we changed?

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The difference between past activities and TOC is that we changed assumptions

FROM	TO

***It is not Gemba to be changed, it is  
management to be changed.***

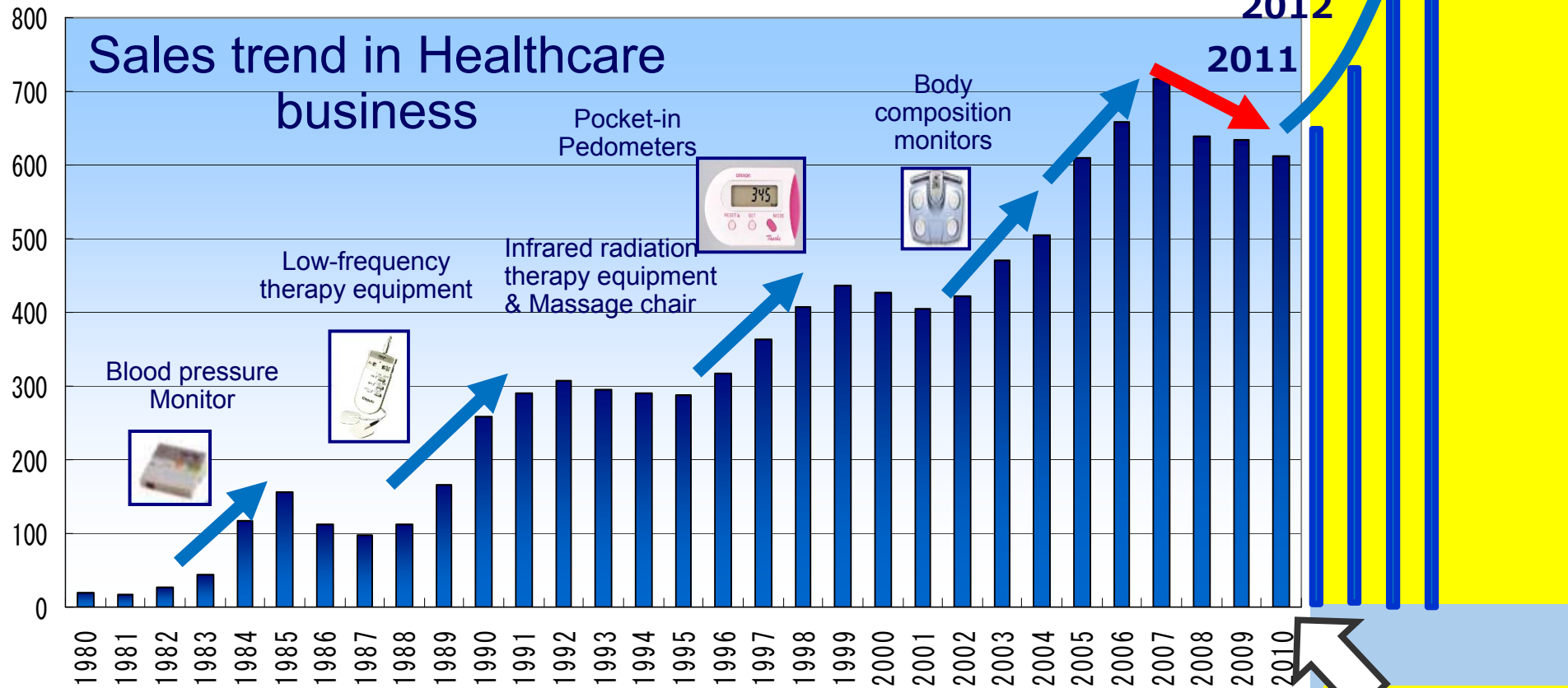
***If management changes,  
Gemba will change.***

# Sales after FY2011

Process innovation

(Unit: Hundred-million Yen)

## Sales trend in Healthcare business



July, 2010  
TOC  
launched

■1978  
HEM-77 was released as the first Home Digital Blood pressure Monitor



■1981  
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(Automatic pressurization-decompression)



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■2000  
Fit cuff HEM-770 A was released

■2004  
HEM-1000 was released which is Home automatic Blood pressure Monitor by measuring upper arms.



# Goods made by TOC sell well

## 15-sec. Prediction digital thermometer MC-680



*First acquisition of monthly SOM No.1 in a prediction digital thermometer market.*

## Pedometer HJA-310



*A new expected product which targeted the lady market*

## Electric toothbrush HT-B47x/B601



*A new product is launched one after another. A business collaboration with C is starting.*

## Body composition monitor HBF-212/214



*Recaptured SOM No.1*

**It is the people who do the development. Therefore, products will get better if the people perform better.**

## Web healthcare service WellnessLINK



**WellnessLINK**

*Registered: 410,000  
\*As of March, 2013*





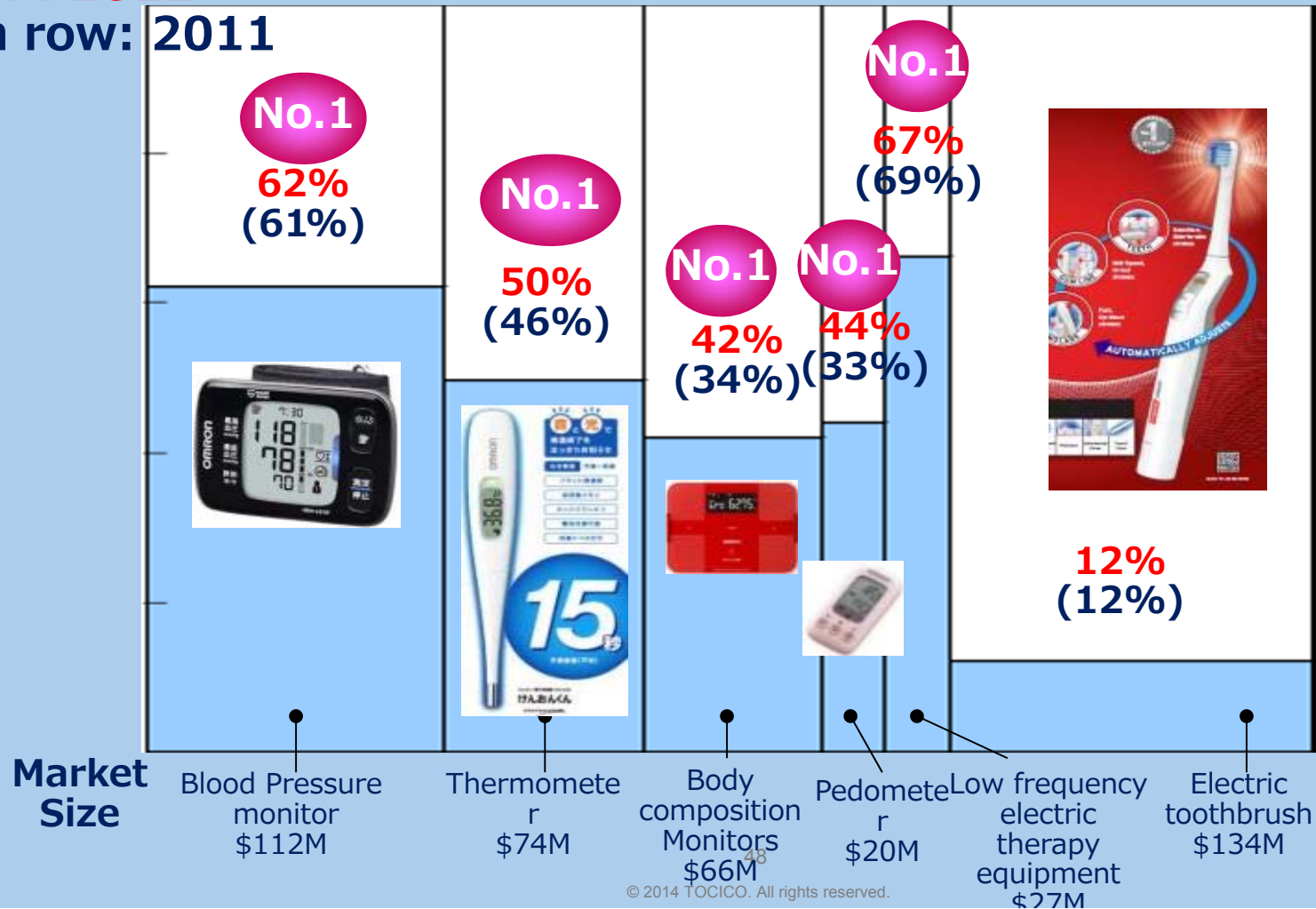
# Share of market in Japanese Market

Achieved the largest market share for both thermometer and pedometer, an accomplishment sought for the year 2012

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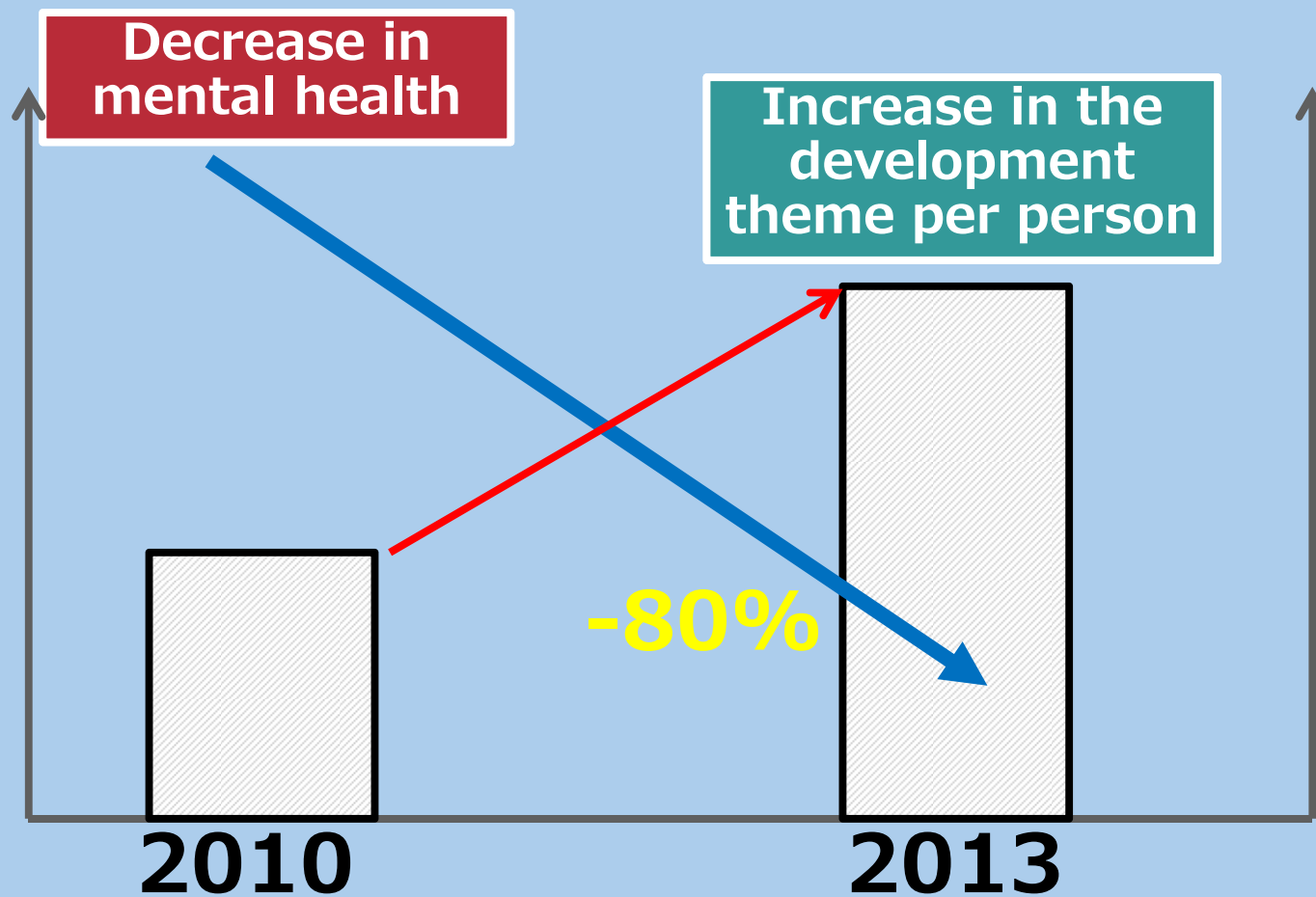
Top row : 2012

Bottom row: 2011



# Changing the way we work

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# The bigger (the more solid) the base, the higher the jump

- I KNOW means you have created a bigger and more solid base.
- If this is the case, then there is no doubt a much bigger jump is there!
- **How to find it?**



**We will speed up our business to solve social issues as a pioneer of the world...**

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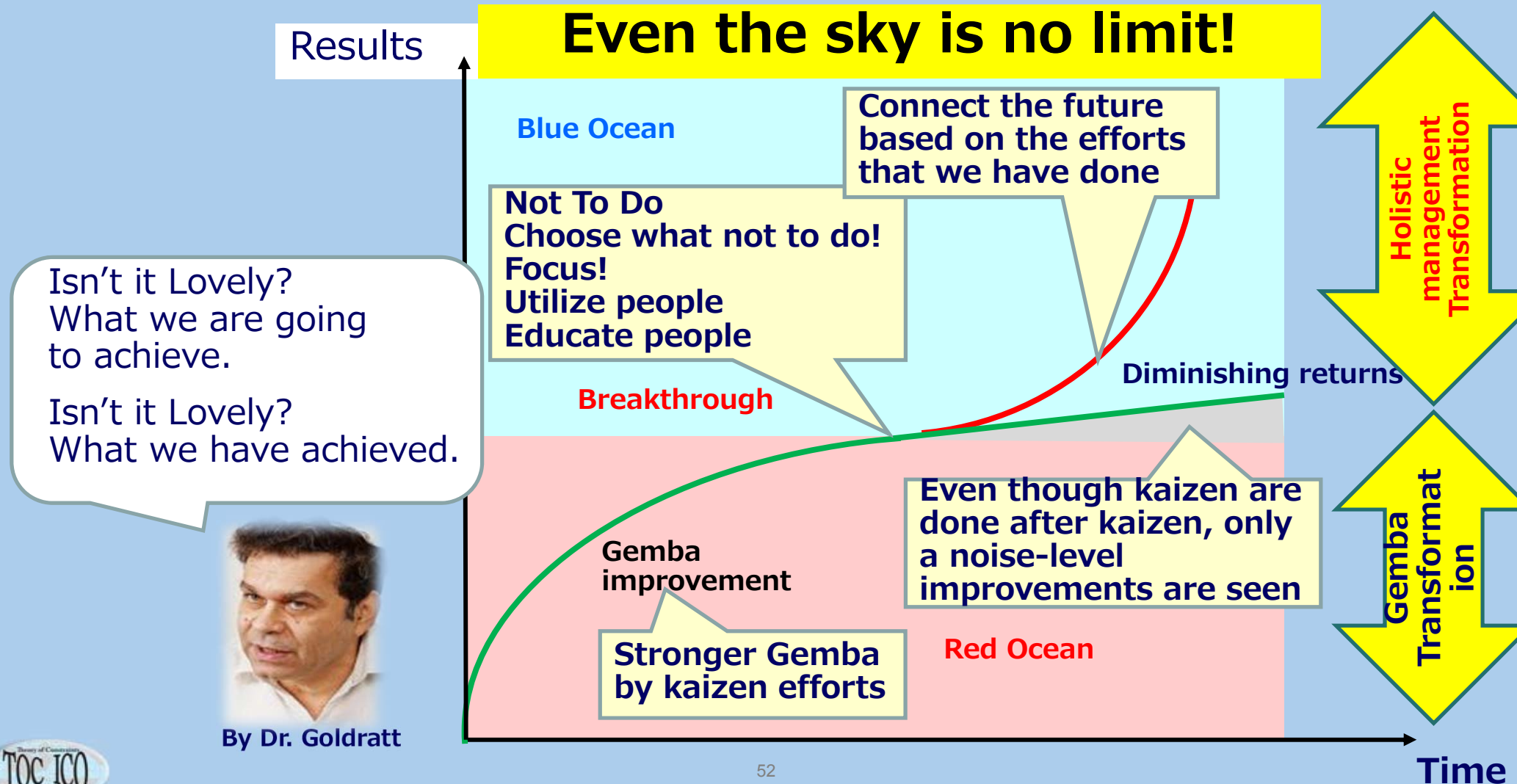
**At work for a better life a better world for all**

**Those who make others happy the most, are the ones that become happy the most.**



# Be aware of the trap of diminishing returns!

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By Dr. Goldratt



# We will be the company that it's fun to come to work, saying "it's Monday!"

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*All for Healthcare INNOVATION  
By work style innovation for All  
Made by TOC*

*Thank you very much!!*