

Mid-Term Project :

Electronic Integration

-Clinic Service Re-engineering

Group 5

Boss:

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Outline

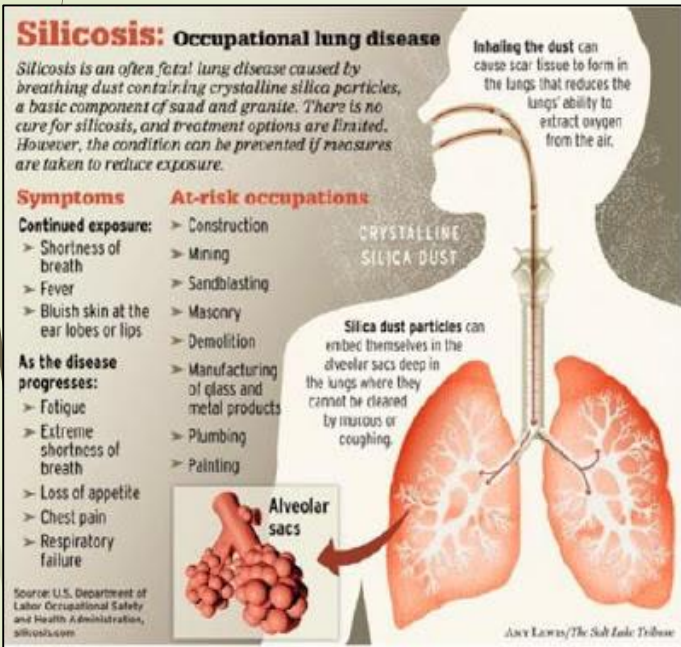
1. Background Introduction

2. DMAIC Method

- **Define: Define the Problem**
- **Measure: As-is model**
- **Analyze: Identify the cause of the problem**
- **Improve: To-be model**
- **Control: Website Demo, Comparison**

3. Conclusion

1. Background Introduction (1/2)



- Since 1989, **Gakki Clinic** has provide medical treatment with **satisfaction** to each patient as well as to ourselves. It is our pleasure to see the patients' smile and satisfaction.
- We major provide **Pneumonoultramicroscopic silicovolcanoconiosis (火山肺矽病)** treatment and other physical /magical heal treatment.
- Goal: We hope provide high quality treatment process for the patients, but not earn more money



1. Background Introduction (2/2)

- ▶ Even patients who are “too busy with work to go to the clinic only in weekends” can visit us. we are open on Saturdays, Sundays, and national holidays as well. Close on Mondays. From 9am-12am, 14pm~17pm, 18pm~21pm every opening day.
- ▶ We have three division: 1. Division of Urology 2. Division of Pediatrics 3. Division of Obstetrics and Gynecology for service patient, each branch service at a period.
- ▶ To ensure the high medical quality and observe the health insurance policy, at most we only offer ninety patients treatment services per day.

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Morning	×	○	○	○	○	○	○
Afternoon	×	○	○	○	○	○	○
Evening	×	○	○	○	○	○	○

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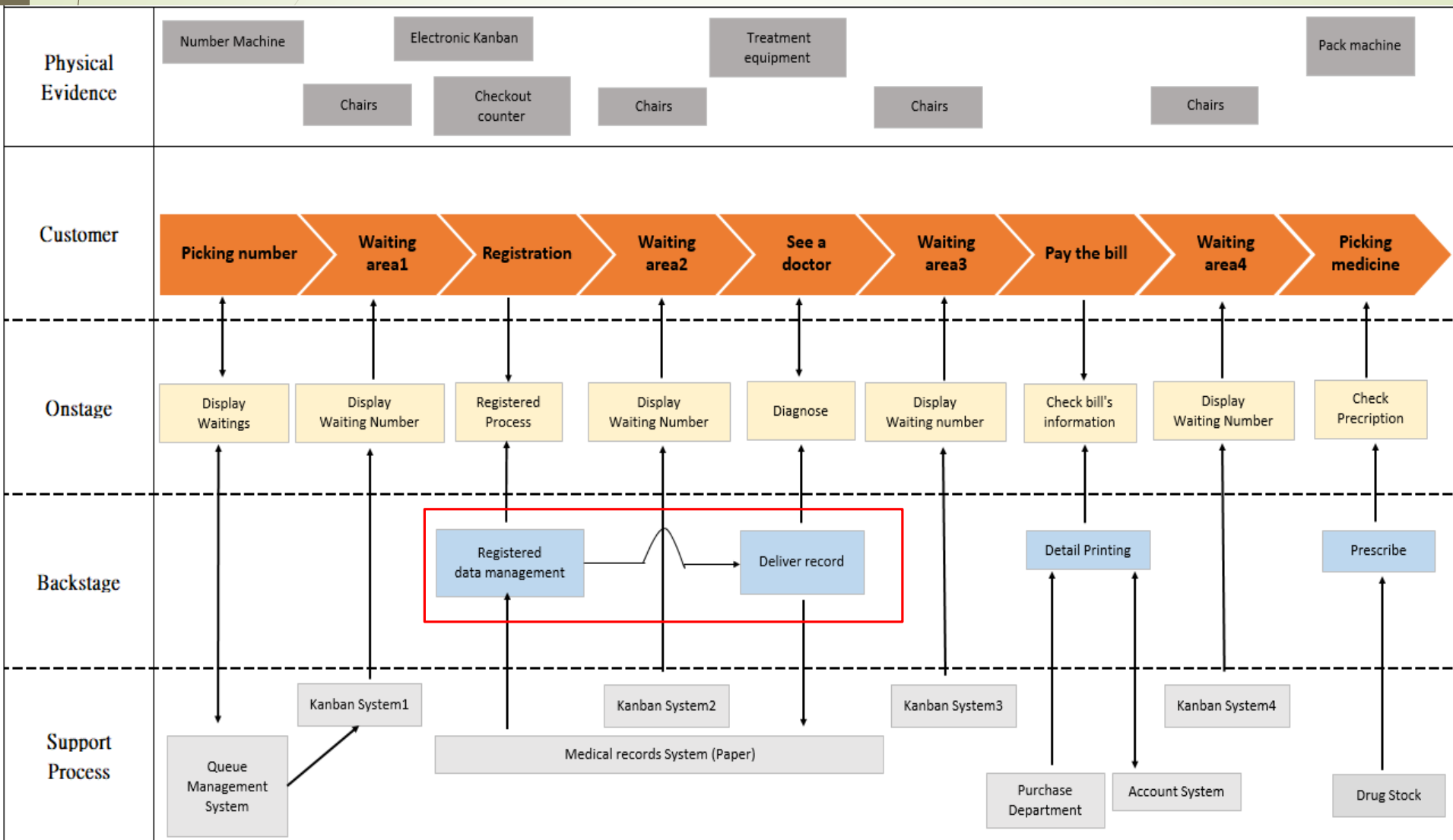


2. DMAIC Method-Problem Define

- ▶ Gakki Clinic have been developing for decades and we have a high evaluation of clinics. However, we are faced with the electronic generation. In order to provide better services and scope, we must re-engineer ourselves into an information electronic clinic. For example, medical record of paper goes online into an electronic medical record. In order to rise customer satisfaction, we want to improve medical process through as-is model to create the new system.

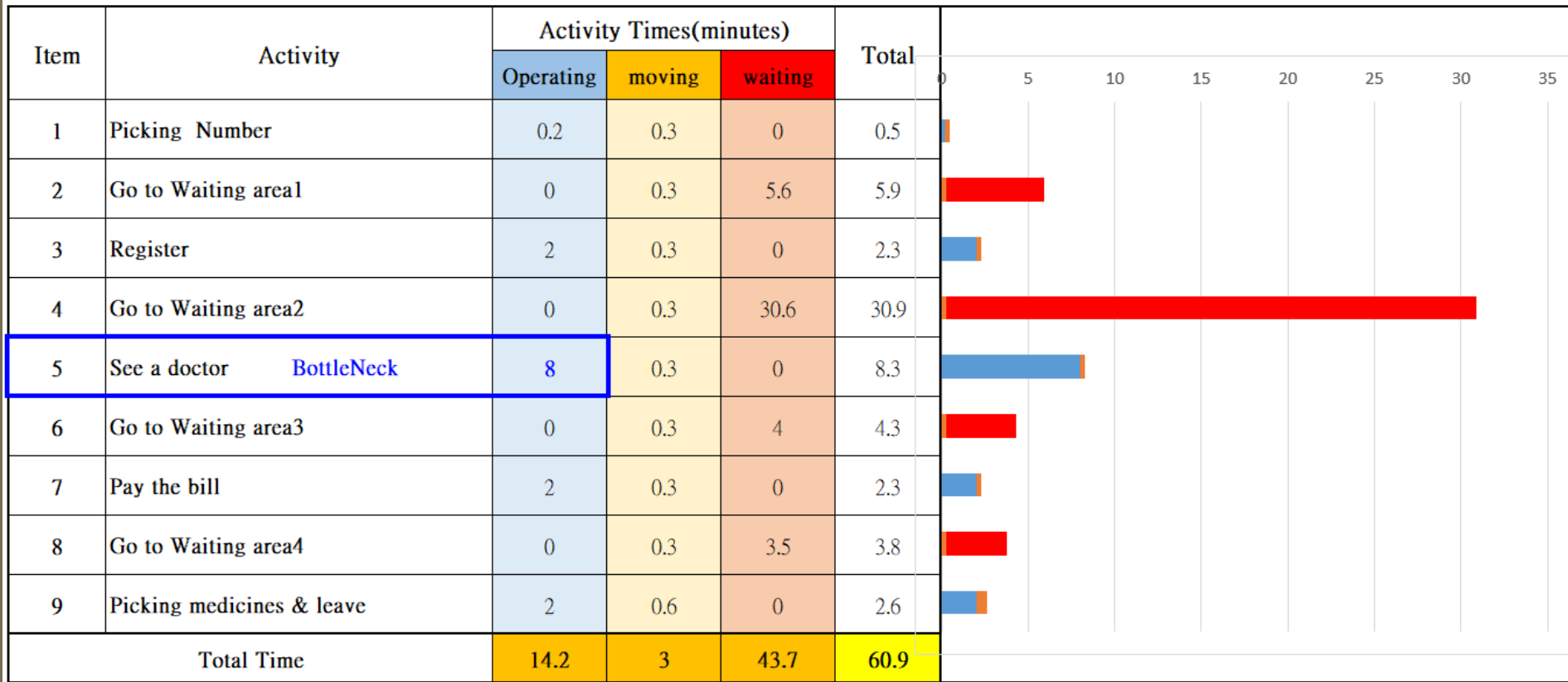


2.DMAIC –Measure (1/8) As-is Model -Service Blueprinting



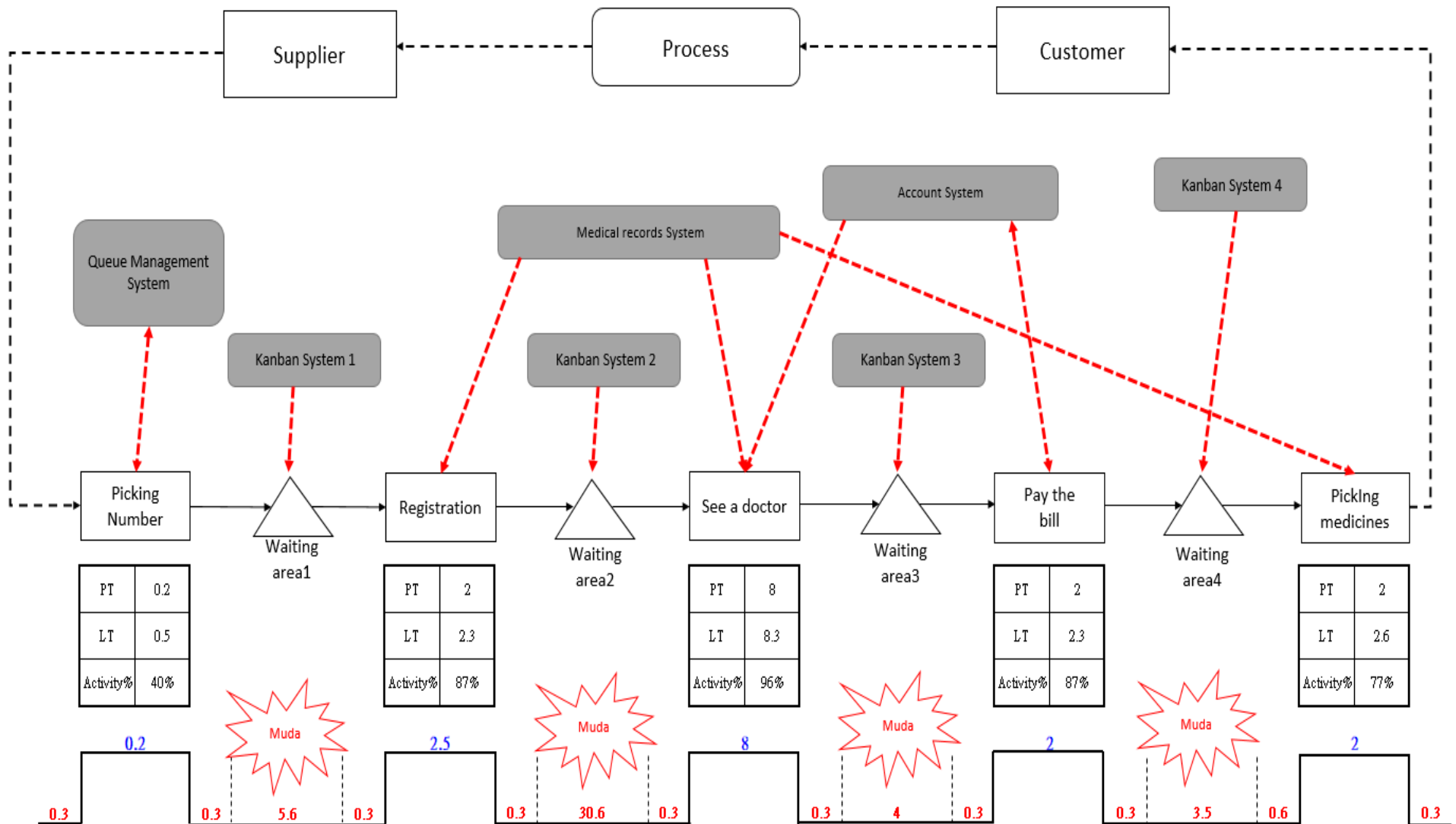
2.DMAIC –Measure (2/8)As-is Model

-Time Analysis

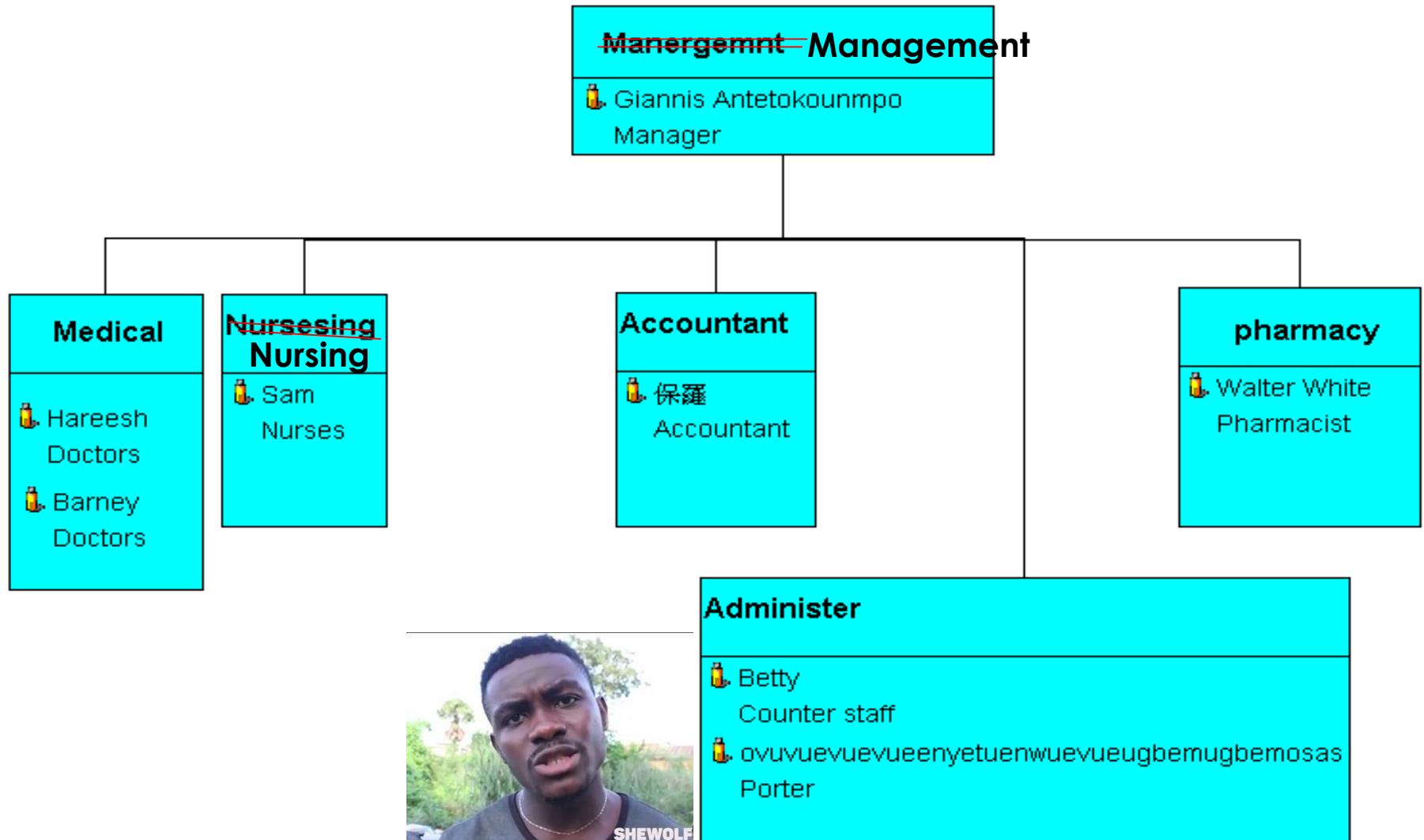


Times/day	Minutes
Move Time	720
Takt time	8
Max Probability	90
Max Orderlist	90

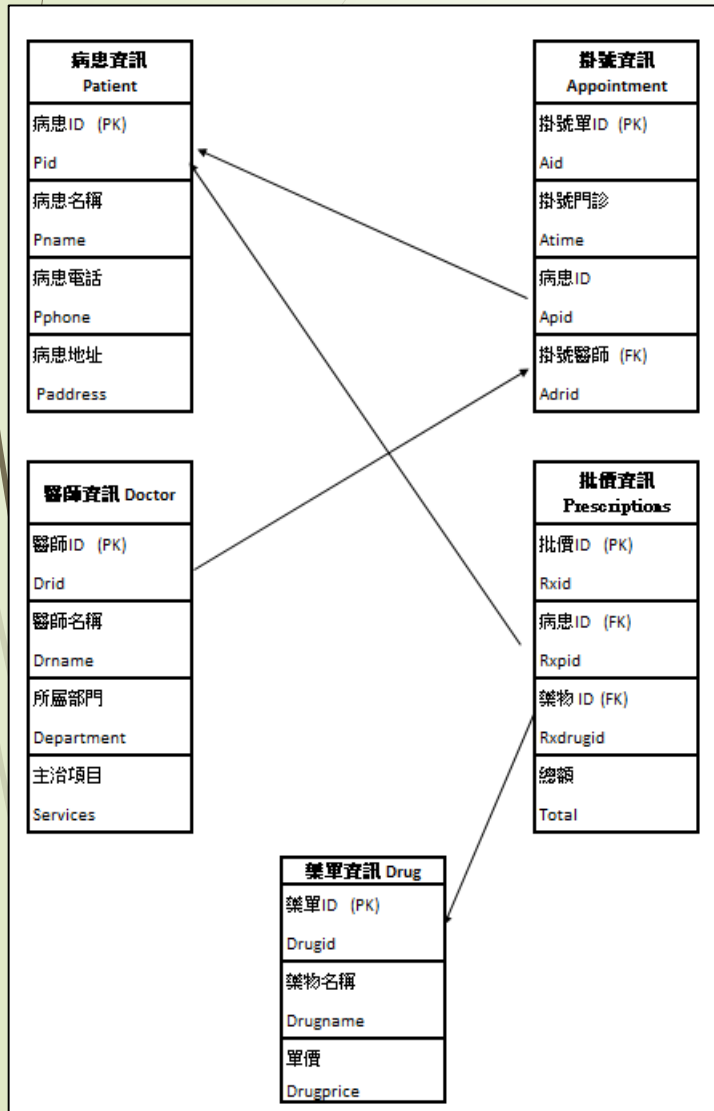
2.DMAIC –Measure (3/8) As-is Model -VSM Diagram



2.DMAIC –Measure (4/8)As-is Model -Organization



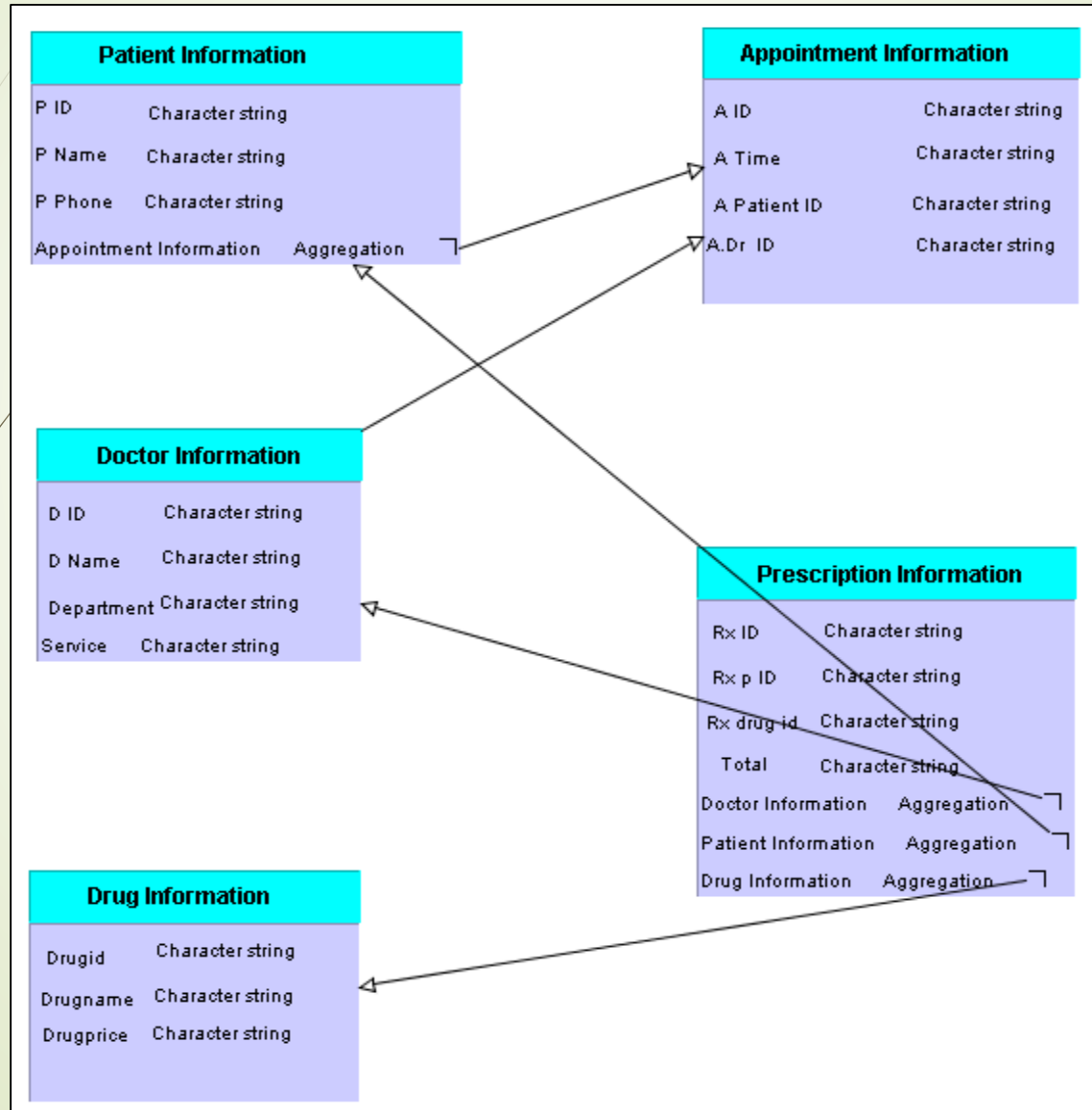
2.DMAIC –Measure(5/8) As-is ER Model -Parameters



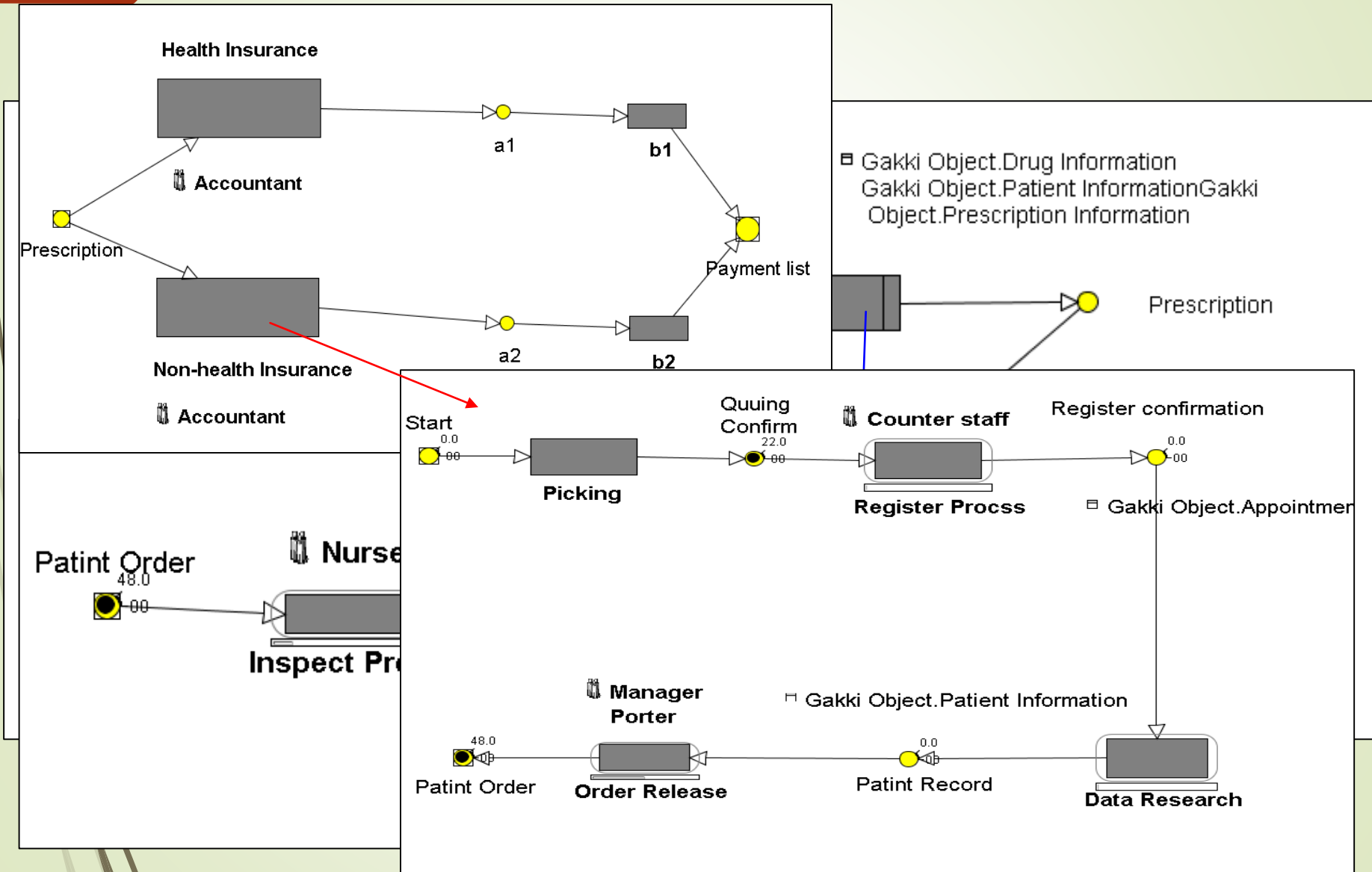
	Prices
Health insurance	\$100
No-Health insurance	\$500

	Department	Payment(m)	Quantity	\$/Day	\$/Patient
1	Management	60000	1	2400	27
2	Medical	60000	2	2400	27
3	Nursing	35000	1	1400	16
4	Finance	35000	1	1400	16
5	Administer	22000	2	880	10
6	Pharmacy	35000	1	1400	16

2.DMAIC –Measure (6/8) As-is ER Model



2.DMAIC –Measure (7/8) As-is Model –Simulation



2.DMAIC –Measure (8/8) As-is Model

–Simulation Result

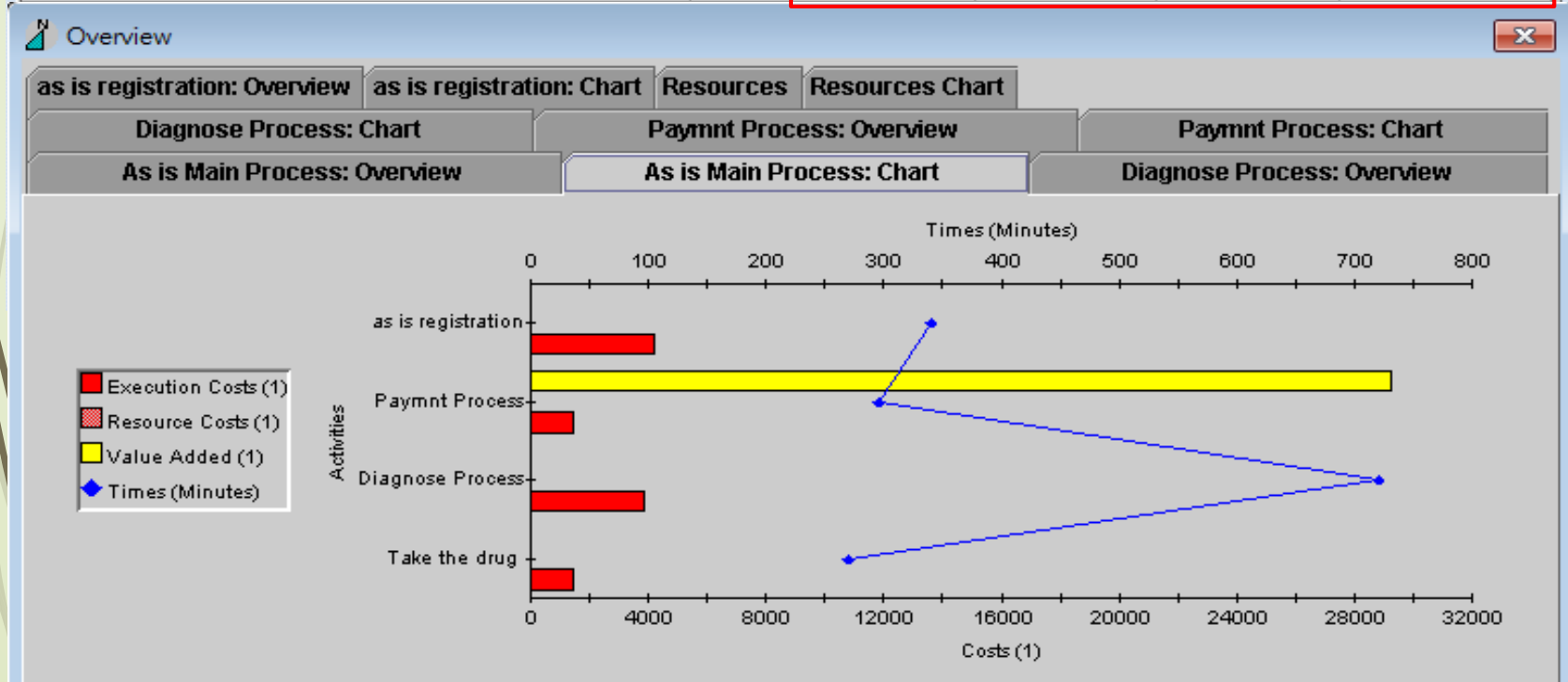
Overview

as is registration: Overview | as is registration: Chart | Resources | Resources Chart

Diagnose Process: Chart | Paymnt Process: Overview | Paymnt Process: Chart

As is Main Process: Overview | As is Main Process: Chart | Diagnose Process: Overview

Activities	Count	Execution Cos...	Resource Cos...	Value Added (1)	Times (Minutes)
Take the drug	90	1,440	0	0	270
Diagnose Process	180	3,870	0	0	720
Paymnt Process	180	1,440	0	29,250	296.1
as is registration	270	4,230	0	0	341.1
Sum	720	10,980	0	29,250	1,627.2



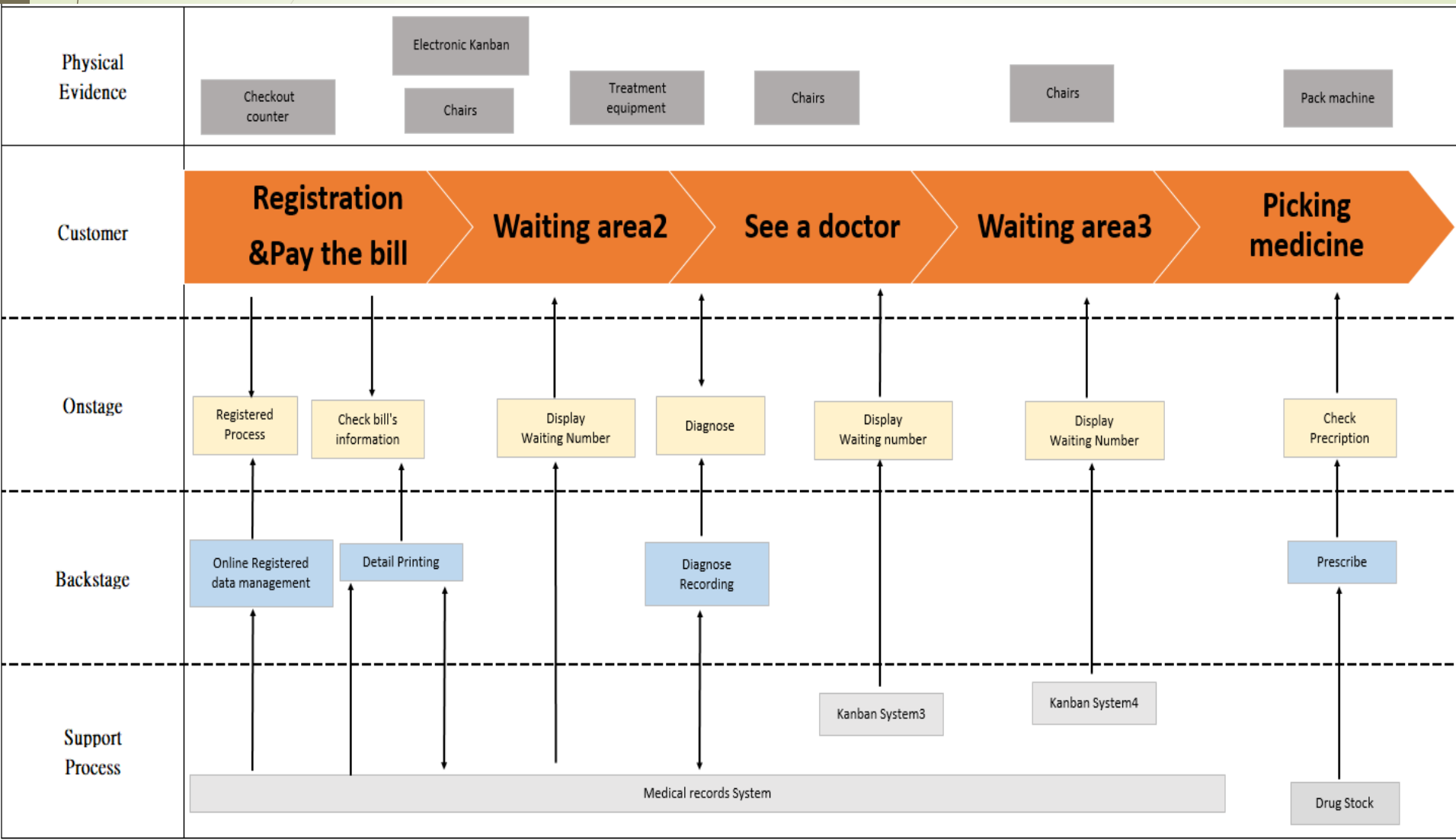
2.DMAIC Method- Analysis (1/2)

	Problems	Method
1	Many waiting wastes	VSM/Blue printing
2	Low productivities	VSM//Blue printing
3	The Stream isn't smooth	VSM/ Time analysis
4	Many systems to manage a process	VSM
5	Human Pass	VSM
6	Transfer waste	Time analysis

2.DMAIC Method- Analysis (2/2)

Item	Problem Definition	Reason	Improvement
Electronic	1 Many waiting wastes	Patients go to clinic Simultaneously	Appoint online and display the Visiting progress
	2 low productivities	Much waiting time	Integrate the working station
	3 The Stream isn't smooth		
Process	4 Many systems to manage a process	Physical facility restrictions	Integrate Electronic system
	5 Human Pass	Paper patient record	Electronic Patient record
	6 Transfer waste	Information transform	

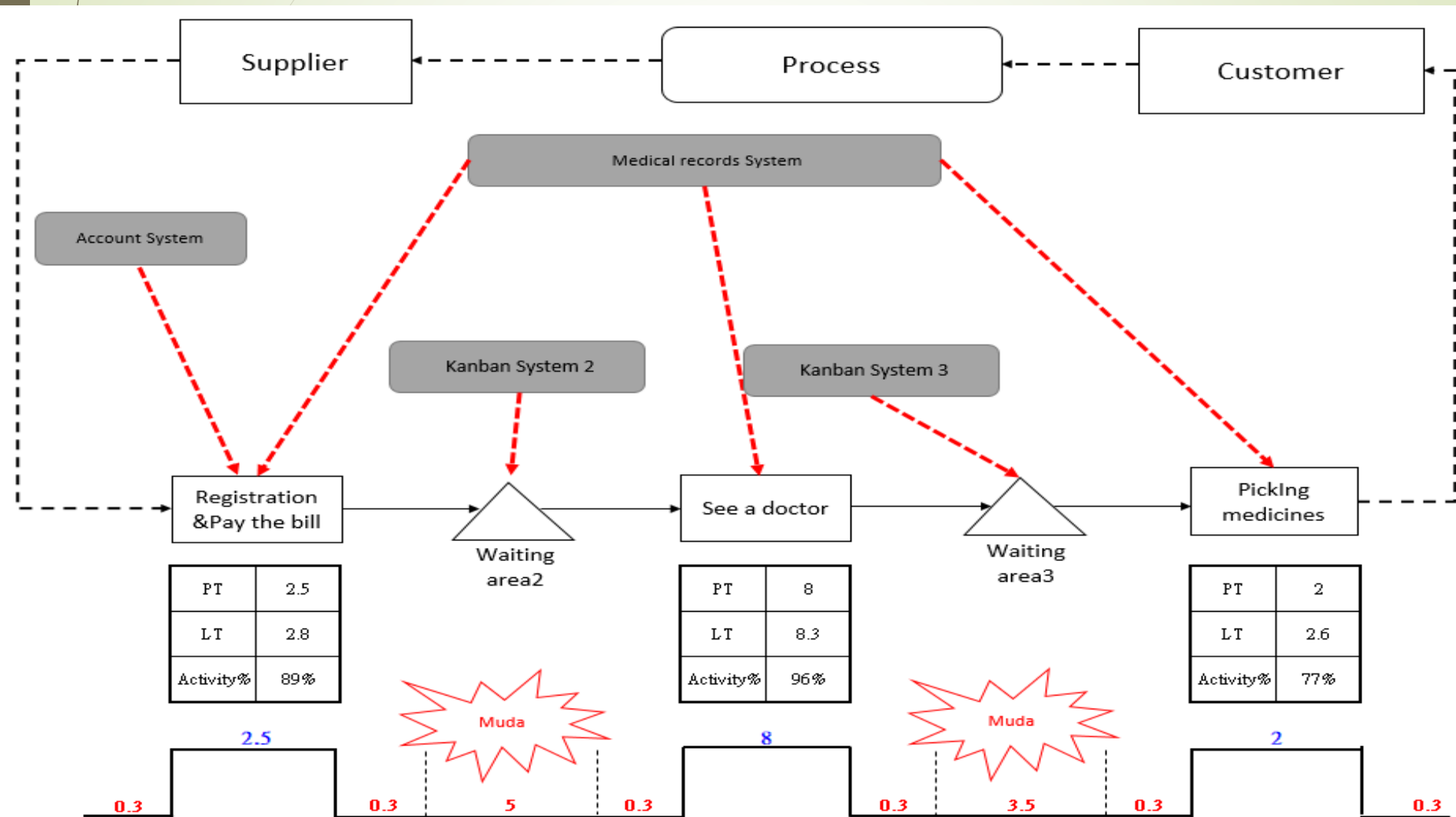
2.DMAIC Method- Improve To-be Model-Service Blueprinting (1/3)



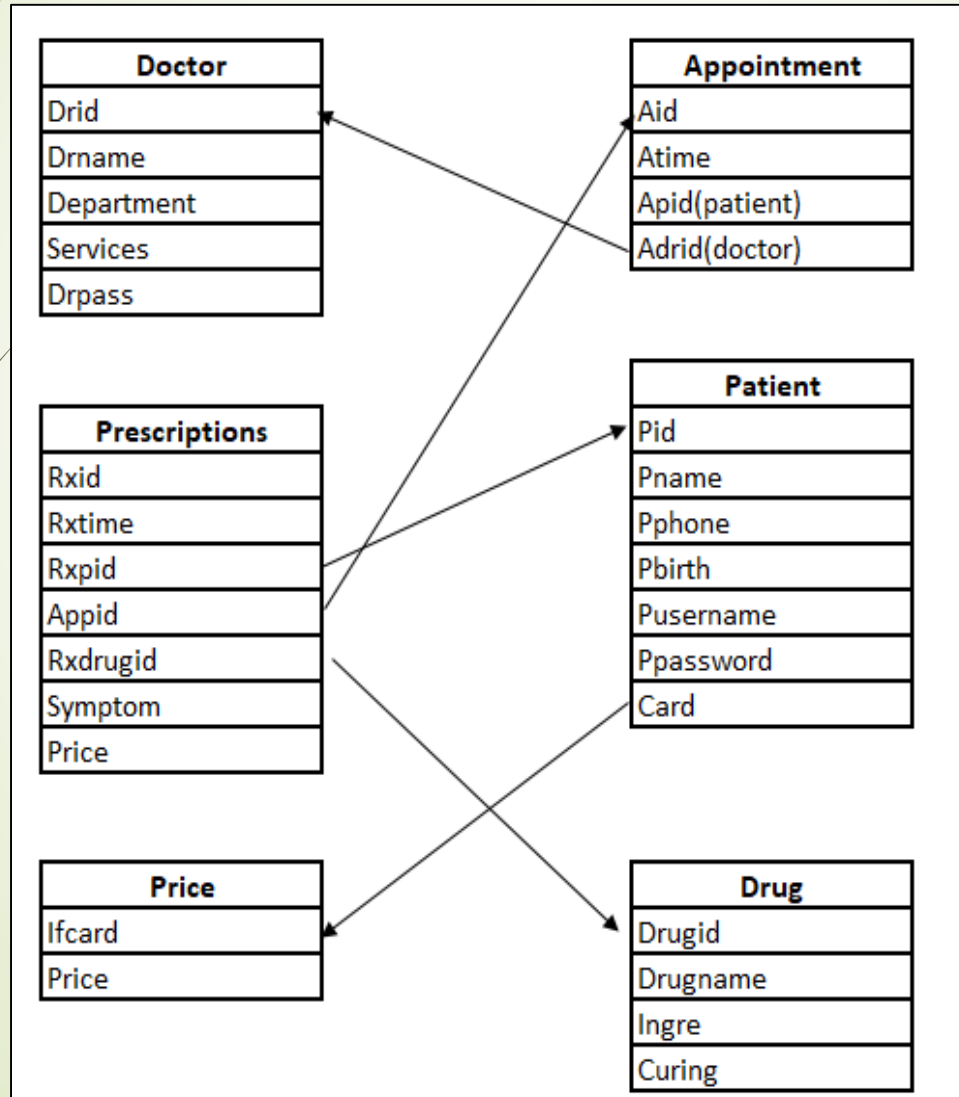
2.DMAIC Method-Improve To-be Model -Time Analysis(2/3)

Item	Activity	Activity Times(minutes)			Total	
		Operating	moving	waiting		
1	Register/Pay the bill	2.5	0.3	0	2.8	
2	Go to Waiting area2	0	0.3	5	5.3	
3	See a doctor BottleNeck	8	0.3	0	8.3	
4	Go to Waiting area4	0	0.3	3.5	3.8	
5	Picking medicines & leave	2	0.6	0	2.6	
Total Time		12.5	1.8	8.5	22.8	

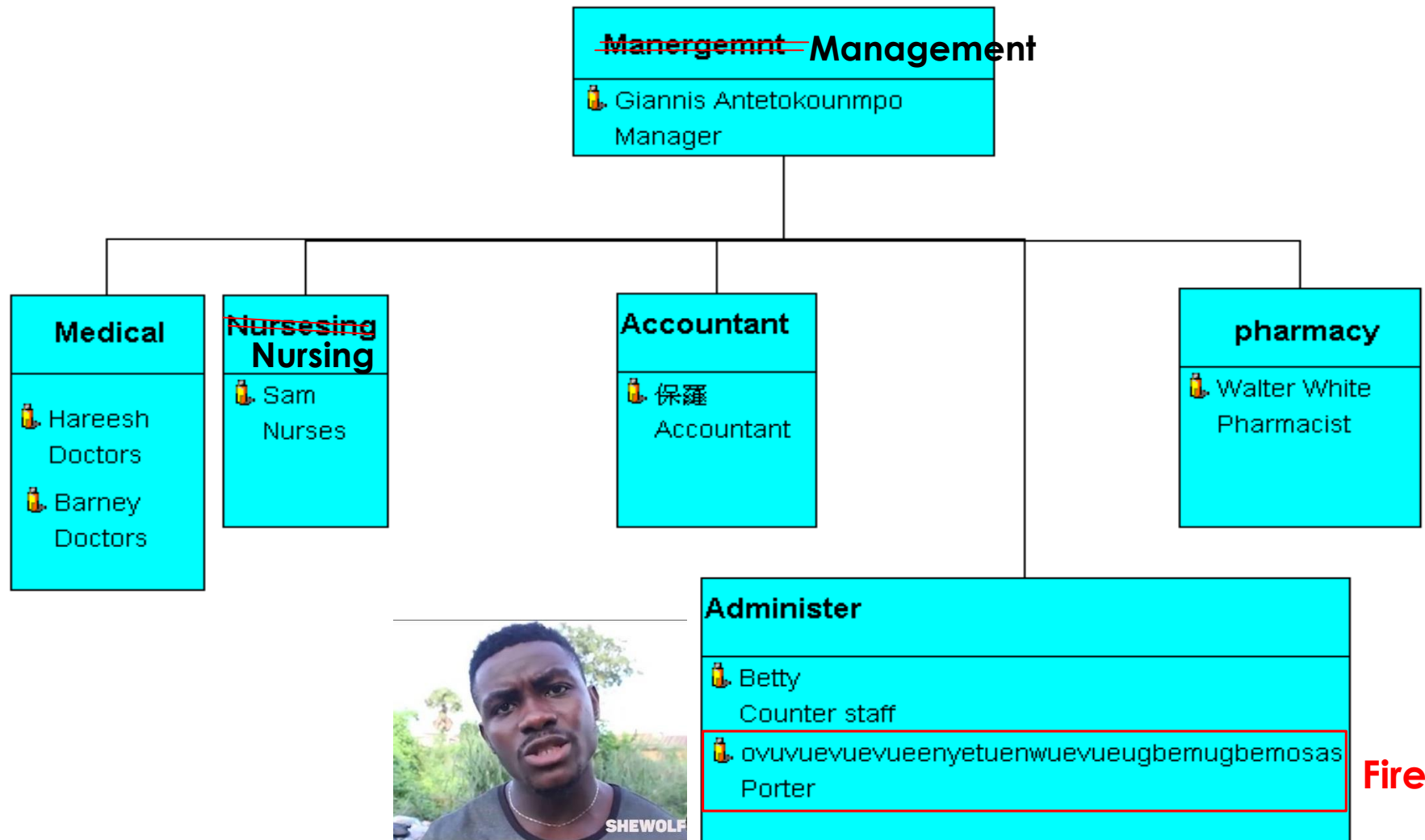
2.DMAIC Method-Improve To-be Model -VSM Diagram(3/3)



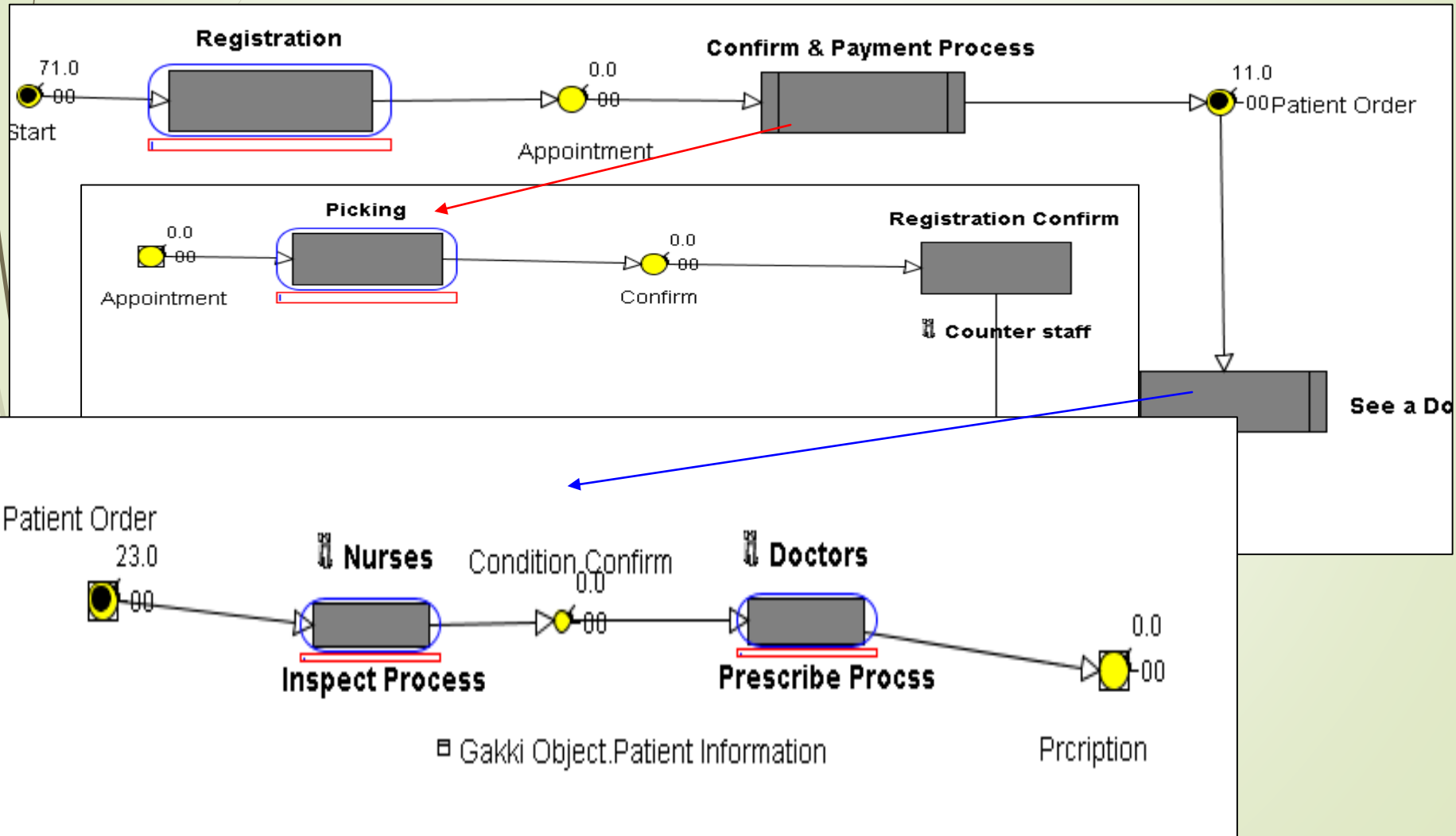
3.DMAIC Method-Improve To-be ER Model & Organize Diagram



2.DMAIC Method-Improve To-Be Model -Organization



2.DMAIC Method-Improve To-Be Model –Simulation



2.DMAIC Method-Improve To-Be Model –Simulation Result

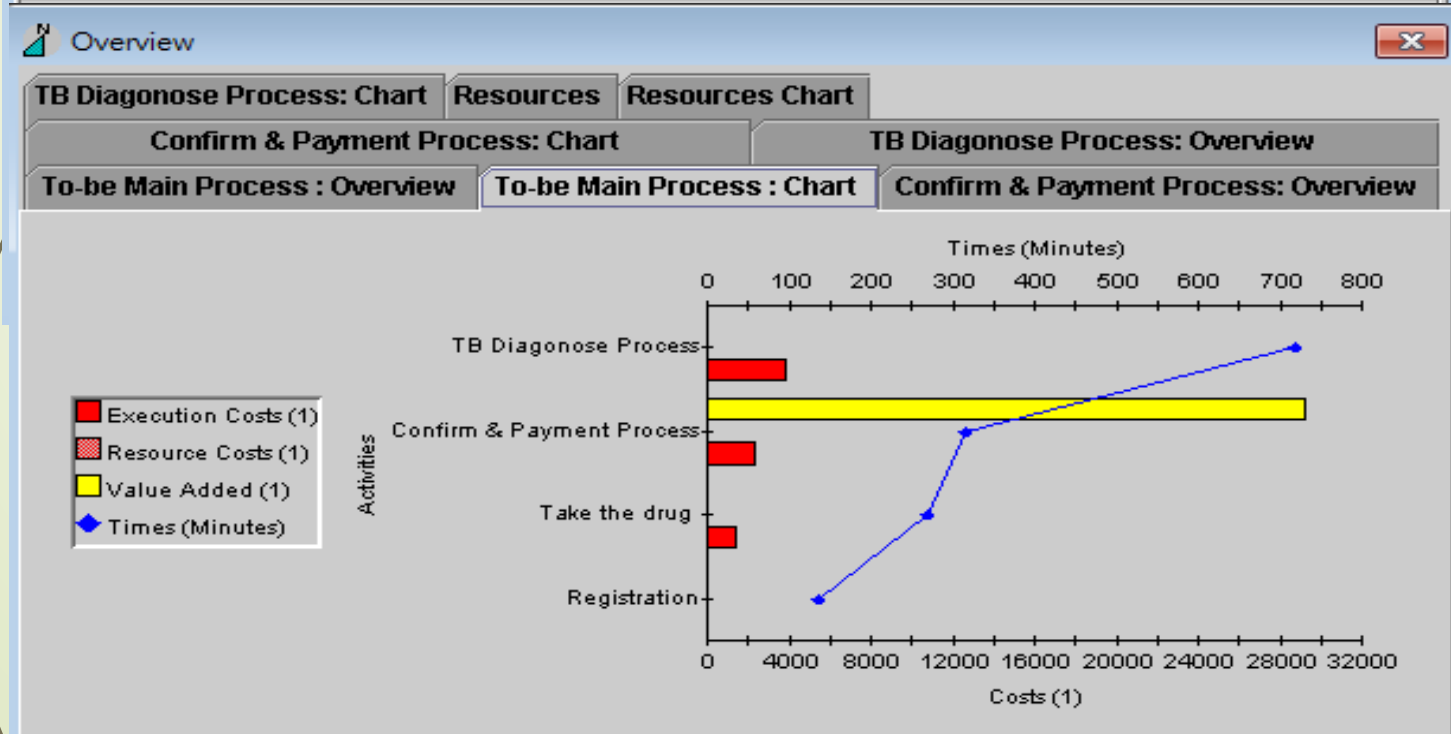
Overview

TB Diagonose Process: Chart Resources Resources Chart

Confirm & Payment Process: Chart TB Diagonose Process: Overview

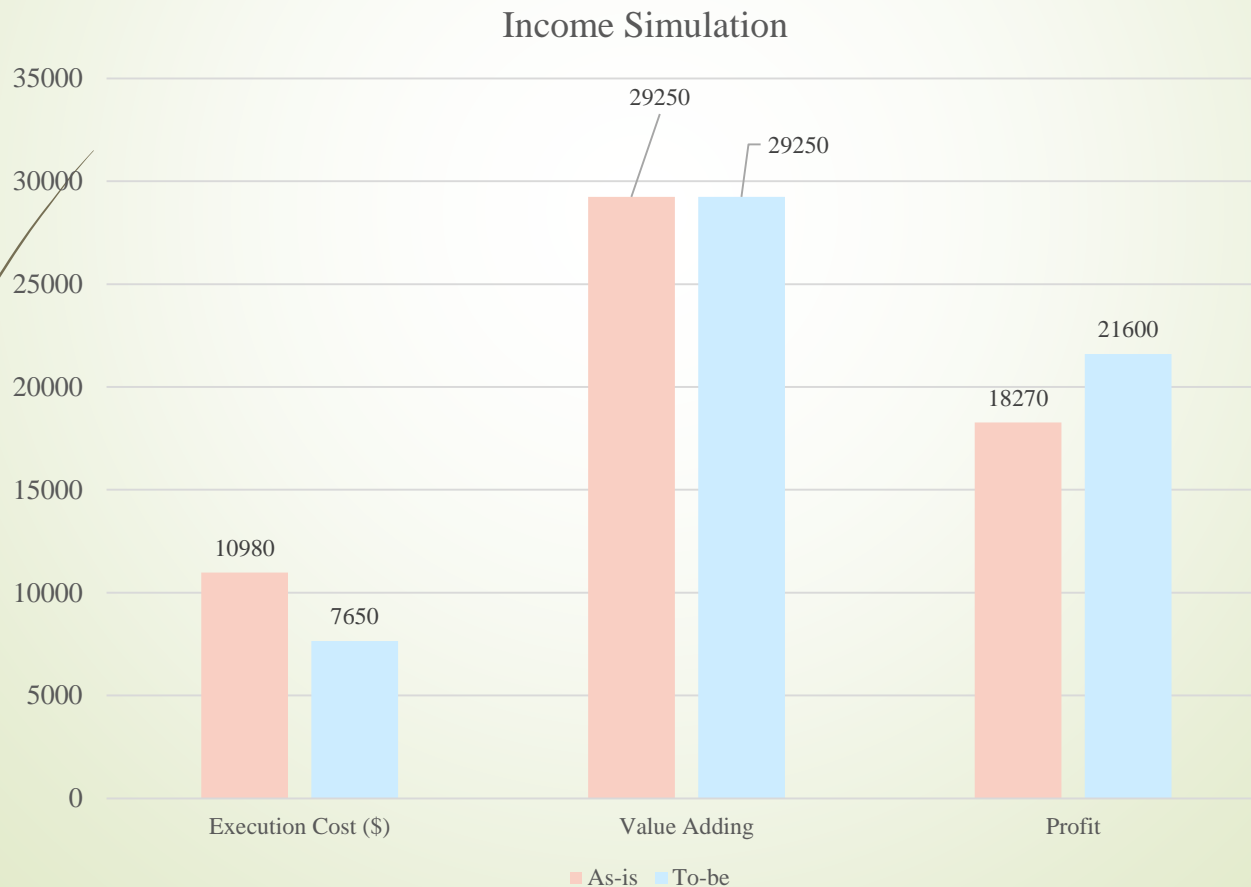
To-be Main Process : Overview To-be Main Process : Chart Confirm & Payment Process: Overview

Activities	Count	Execution...	Resourc...	Value Ad...	Times (M...
Registration	90	0	0	0	135
Take the drug	90	1,440	0	0	270
Confirm & Payment Process	360	2,340	0	29,250	316.5
TB Diagonose Process	180	3,870	0	0	720
Sum	720	7,650	0	29,250	1,441.5



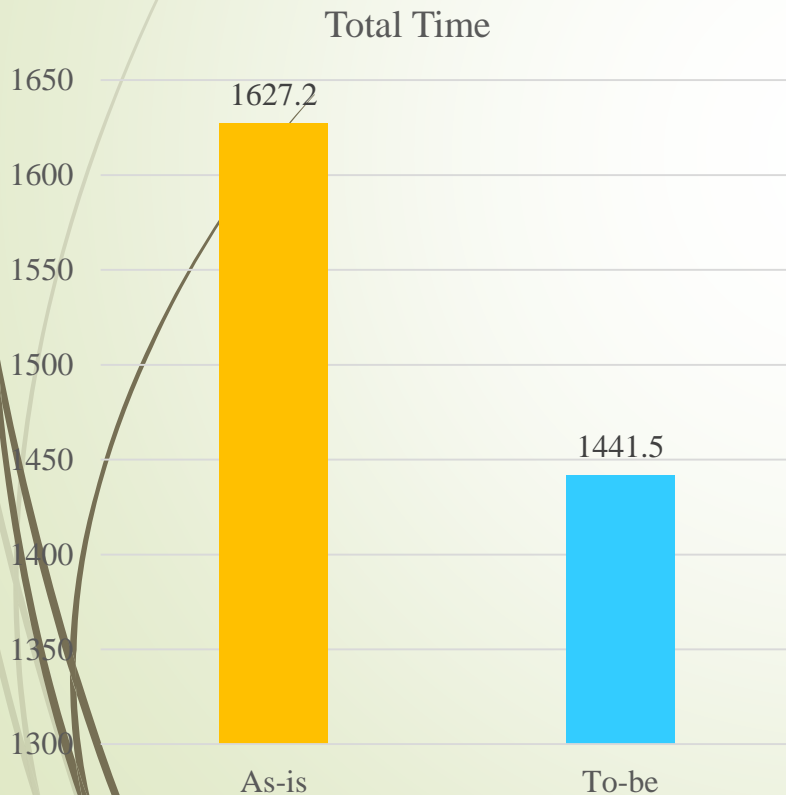
2.DMAIC Method-Control Compare (1/2)

As-is & To-Be Income Simulation



2.DMAIC Method-Control Compare (2/2)

As-is & To-Be Income Simulation



Metric	As-is	To-be
Lead Time	60.9	22.8
Operation Time	14.2	12.5
Activity(%)	23%	55%
System	7	4
Employee	8	7

2.DMAIC Method-Control Website Demo

- **Barney's clinic** <http://140.114.54.94/group5/index.php>)
- **Doctors**
 - Urology, pediatrics, obstetrics and gynecology
 - Create a prescription
- **Member**
 - Appointment registration, delete
 - Add, modify member information
- **Drugs**



3. Conclusion

- **-Real measurement are conducted in as-is model, and the to-be model refers from real hospital website.**
- **-In our project, DMAIC, TOC and VSM are used to define and analyze the problems.**
- **-After setting an online appointment system, it apparently shortens the time for each patient in the clinic.**
- **-From the results of income simulation, the cost and time decreased, and the profit increase.**
- **-In the future, it can combine with app to be more convenient.**

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