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Improve Cross - border E-commerce Logistics Risk
Using SCCOM Framework and Risk Analysis

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1
Introduction

Global consuming market has transferred

retail sales might reach 3400 billion dollars.
increasing price over than 27%.

customers and e-commerce companies have new requirements for logistics

They want faster, more accurate, and more efficient

Logistic is the main foreign trade expenditures

So, e-commerce companies should more take care of logistic risk, any mistake maybe cause significant losses.

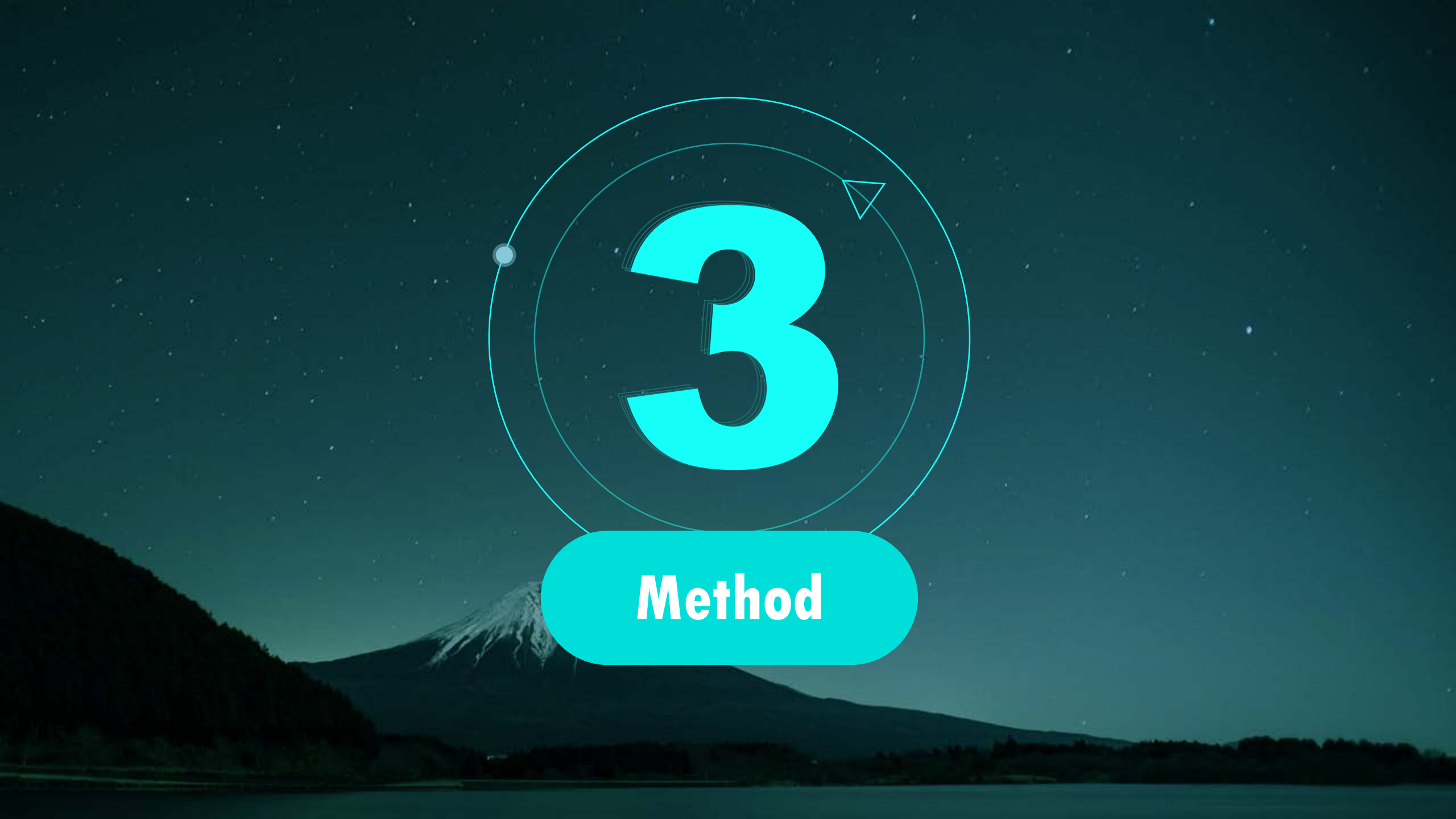

2
Literature
Review

1

01 Cross border e-commerce

02 International supply chain management

03 Risk analysis


3
Method

Step 1
Understanding the SCCOM background

Step 2
Defining SCCOM scope and objectives

Step 3
Operational impact analysis

Step 4
Continuous operational risk assessment

Step 5
Continuous operational strategy

01 / Understanding the SCCOM background

Understand the relationship of logistic system and supply chain management, and the potential impact
Who's playing a role?
risk decision maker, related regulation, expectation of customer and manager

02 / Defining SCCOM scope and objectives

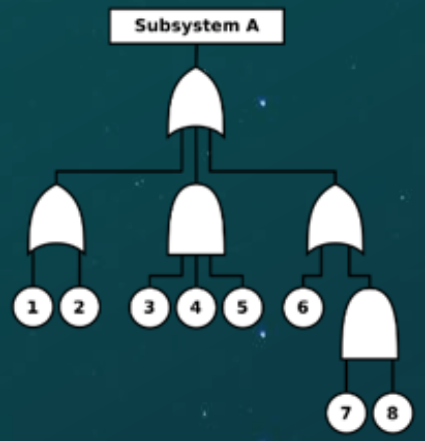
Define the scope of your analysis.
Main product activity, export airport or port, accepted operation and service level

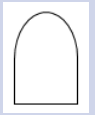
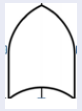
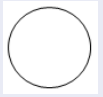
03 / Operational impact analysis

Identify the impact on industry supply chain activities
Confirm the maximum time of tolerable interrupt service
Interview experts to know the realistic situation of cross border
Logistic step by step collect some error service contents of cross border logistic
Further classification and analysis by the information

04 / Continuous operational risk assessment

FMEA
Fault Free Analysis



Gate symbols	Description
	This symbol means AND gate and the event above is caused by one of events below, but these event is independent with each other.
	This symbol means OR gate, and the event above is caused by one of events below, but these event would not happen simultaneously.
Event symbols	Description
	This symbol means original failure event. The occurrence state is normal and the event is caused by other factors, not need to be unfolded to next level.
	This symbol means secondary failure event. The occurrence state is abnormal and the event is caused by other factors, need to be unfolded to next level.

05 / Continuous operational strategy

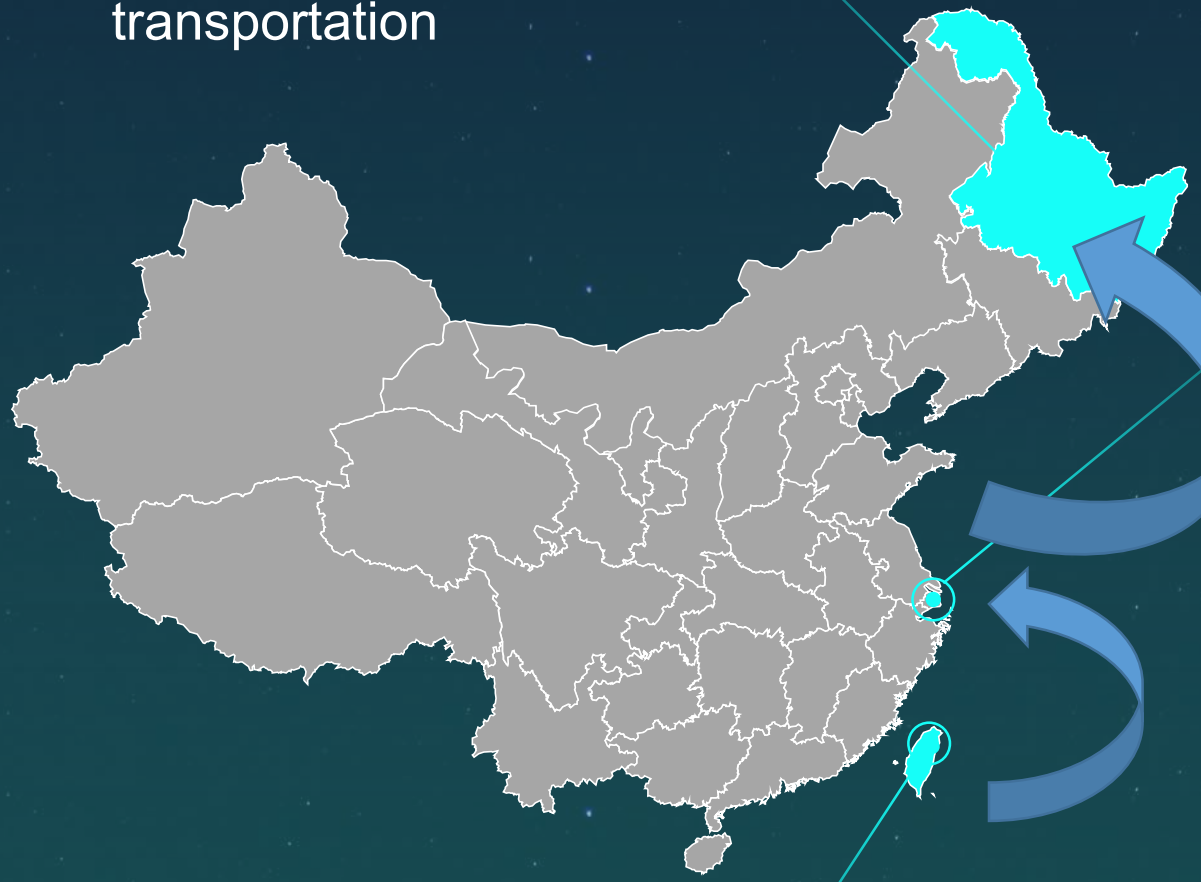
Elaborate alternative strategies
Select the best alternative strategy
Identify the resource requirements for the implementation of the strategic plan


4
Case Study

4.1

Understanding “Double 11”of Taobao logistics background

Heilongjiang **03**
Domestic transportation



02
Shenghai
Logistic center

01 **Taiwan**
Domestic transportation

The services could be separated into two ways

1.cross-border home delivery service
2.cross-border convenience store service.

4.2

Defining SCCOM scope and objectives on cross border logistic service

1. Seller sending
2. Logistic process in Taiwan
3. Labeling work in Taiwan
4. Cross-border logistic work
5. Labeling work in China
5. Delivery process in China

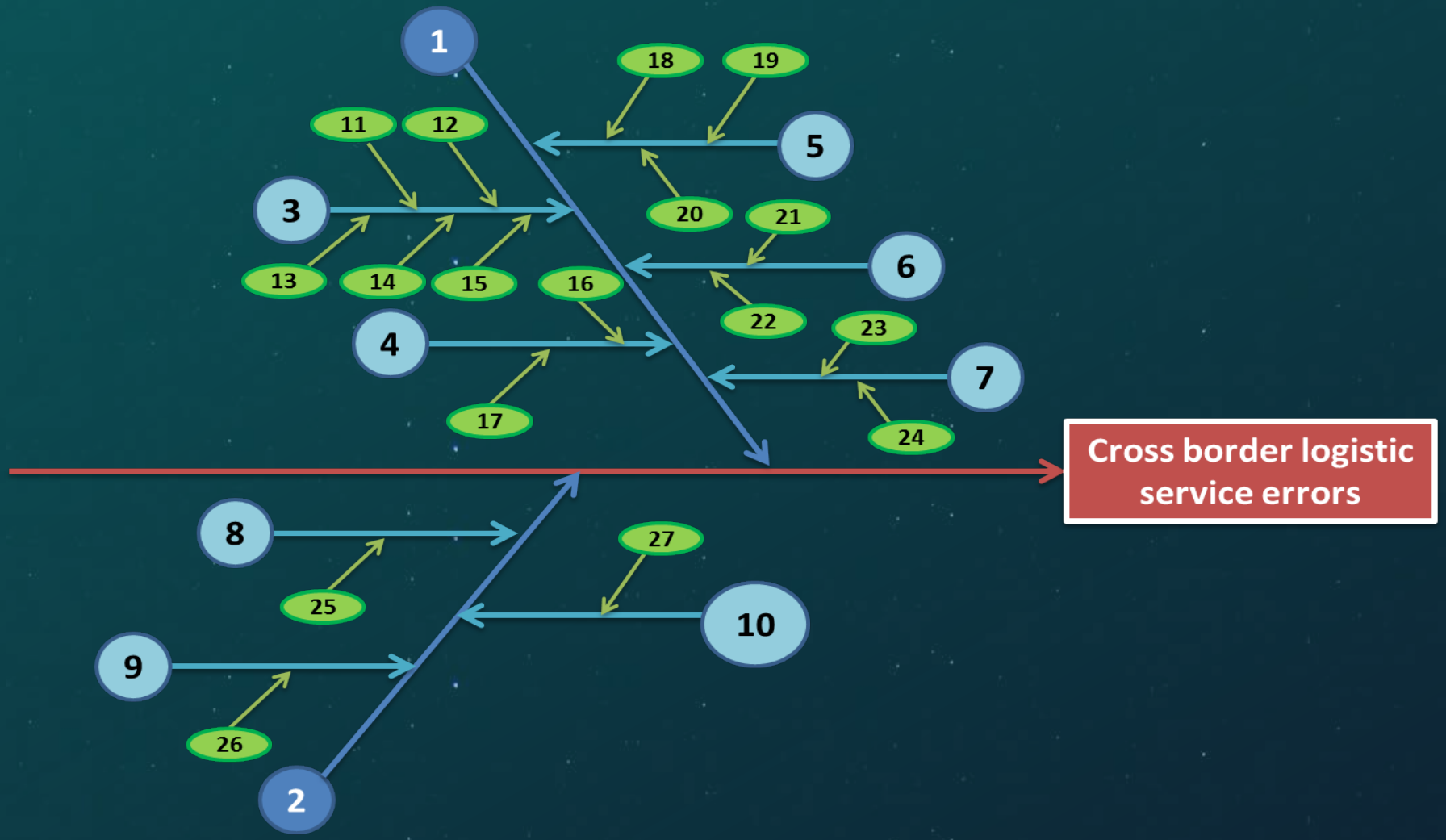
4.3

Operational impact analysis on cross border logistic service

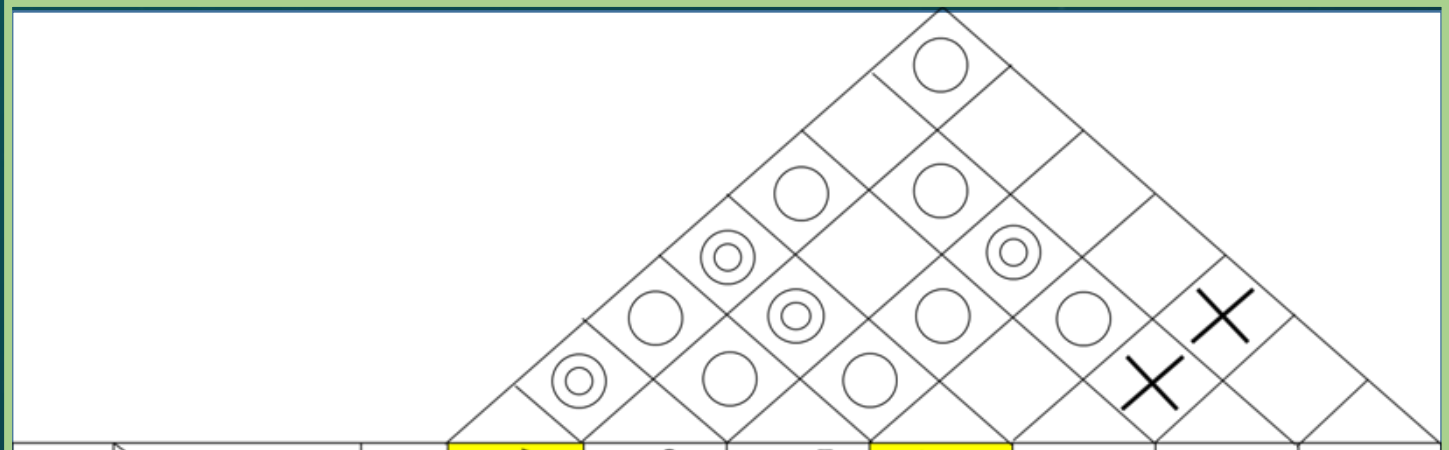
Cross border logistic service errors

Types	Service error content	Service error reason
1 logistic	3 Store employees errors	11 Input wrong information
		12 Product missing
		13 Delivery sheet missing
		14 Product not meet delivery regulations
		15 Wrong Package
	4 Delivery employees errors	16 Delay (ex: traffic jam, weather, car accident, etc.)
		17 Product damage
	5 Tally employees errors	18 Wrong Classification in logistic boxes
		19 Unboxing damage
		20 Product damage
	6 Cross border delivery errors	21 Delay(ex: weather, vehicle, custom)
		22 Product damage
	7 consumers	23 Wrong pick-up
		24 Leave wrong Information
2 Information flow	8 Store information errors	25 Consumers information loss
	9 Information connect errors	26 Out of synchronization
	10 Tally information errors	27 Wrong classification of foreign products and domestic products

Cause & Effect Diagram



Quality Function Deployment



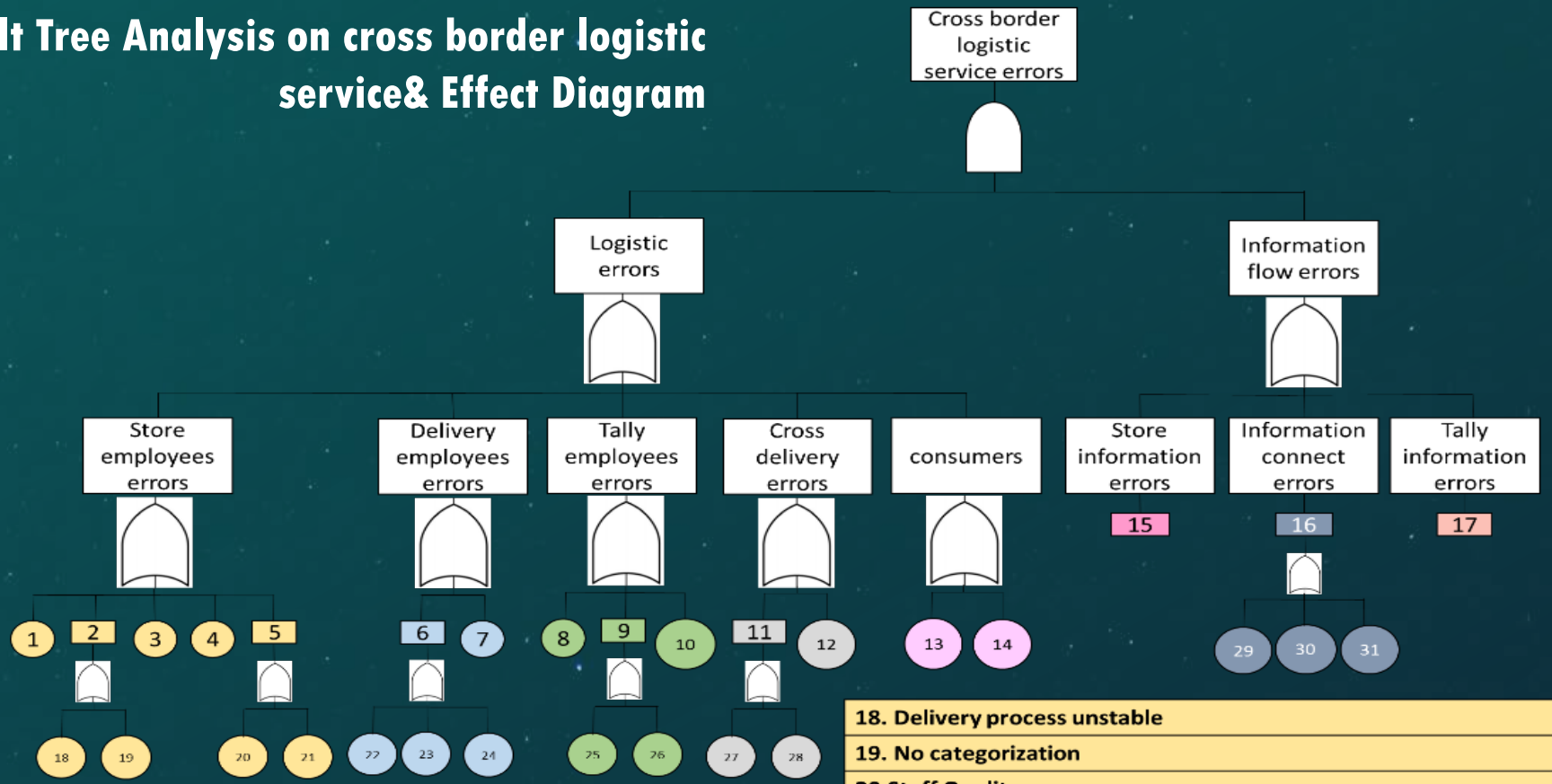
Row number	Technical Requirement (How) / (Whats) Customer Requirement	Expert Importance	Avoiding logistic error ability	Communication frequency	Performance of cross-border delivery	Information synchronization	communication ability with customs	cross border stability	Operation ability of employee
	Column number		1	2	3	4	5	6	7
1	Store employees errors	3	◯	◯		▽		▽	◎
2	Delivery employee errors	2	◯	◯		◎		▽	◎
3	Tally employees errors	4	◯	◯		▽			◎
4	Cross border delivery errors	5	◯					◎	
5	Consumers errors	3	◯			◯			
6	Store information errors	5	◯	◯		▽		◎	◯
7	Information connect errors	5	◎	◯		◎			
8	Tally information errors	5	◯			◯			◯
	Weight Value		**106**	**57**		**71**		**55**	**55**

4.4

Risk Priority Numbers

	Failure			Cause		Detection		Action	
Item	Failure mode	Failure effect	Severity	Failure reason	Occurrence	Exist Control policy	Detection	RPN	Advise
logistic	Store employees errors	Input wrong information	5	Product missing, Delivery sheet missing	5	Process regulation	4	100	More employee training
	Delivery employees errors	Delivery Delay	6	Product damage	3	Delivery corporation regulation	4	72	More driver training
	Tally employees errors	Wrong Classification	7	Unboxing damage, Product damage	2	Delivery corporation regulation	6	72	Double checking
	Cross border delivery errors	Delivery Delay	8	Product damage	5	Related law between countries	3	120	Strict standard at custom
	consumers	Carefulness	6	Wrong pick-up, Leave wrong Information	4	Receipt keeping	4	96	Sign and checking in receipt
Information flow	Store information errors	Data loss	5	Consumers information loss	4	Computer management	4	80	Database back up
	Information connect errors	Data link failure or loss	6	Out of synchronization	6	Computer management	4	144	Database back up
	Tally information errors	Wrong packaging or missing	7	Wrong classification of foreign products and domestic products	3	Logistic system	4	84	Strict training

Fault Tree Analysis on cross border logistic service& Effect Diagram



1.Input wrong information
2.Product missing
3.Delivery sheet missing
4.Product not meet delivery regulations
5.Wrong Package
6.Delay (ex: traffic jam, weather, car accident, etc.)
7.Product damage
8.Wrong Classification in logistic boxes
9.Unboxing damage
10.Product damage
11.Delay(ex: vehicle, custom)
12.Product damage
13.Wrong pick-up
14.Leave wrong Information
15.Consumers information loss
16.Out of synchronization
17.Wrong classification of foreign products and domestic products

18. Delivery process unstable
19. No categorization
20.Staff Quality
21.Distraction
22.Traffic Jam
23.Weather
24.Car accident
25.Employee training
26.Personnel reason
27.Vehicle damage
28.Fault of communication with customs
29.Lack of unified management
30.Poor system connection
31.Lack of database integration

4.4

Continuous operational strategy on cross border logistic service

1. Avoid logistics errors ability

weekly meeting

2. Information synchronization

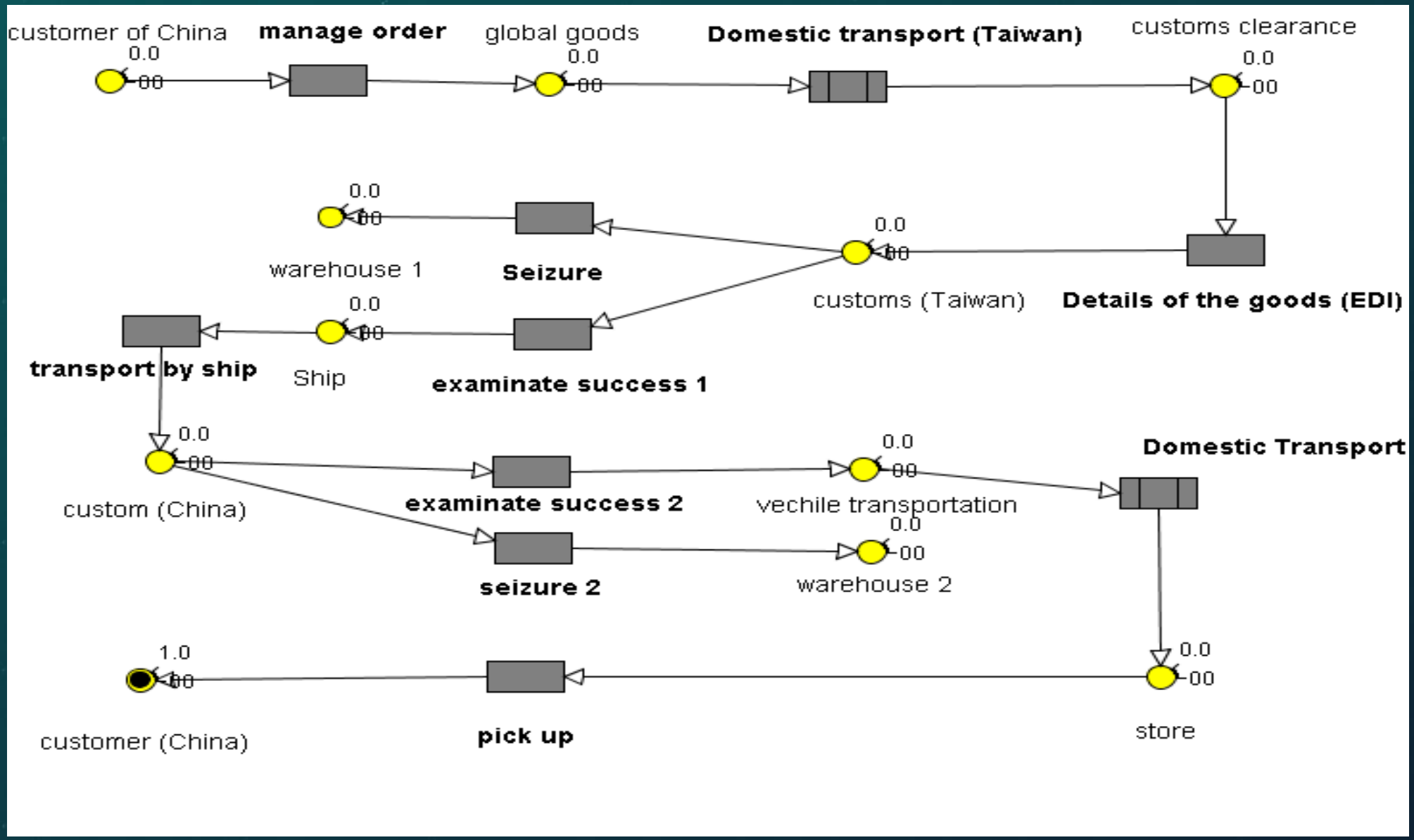
formulate a serious regulation

education


5
Verification

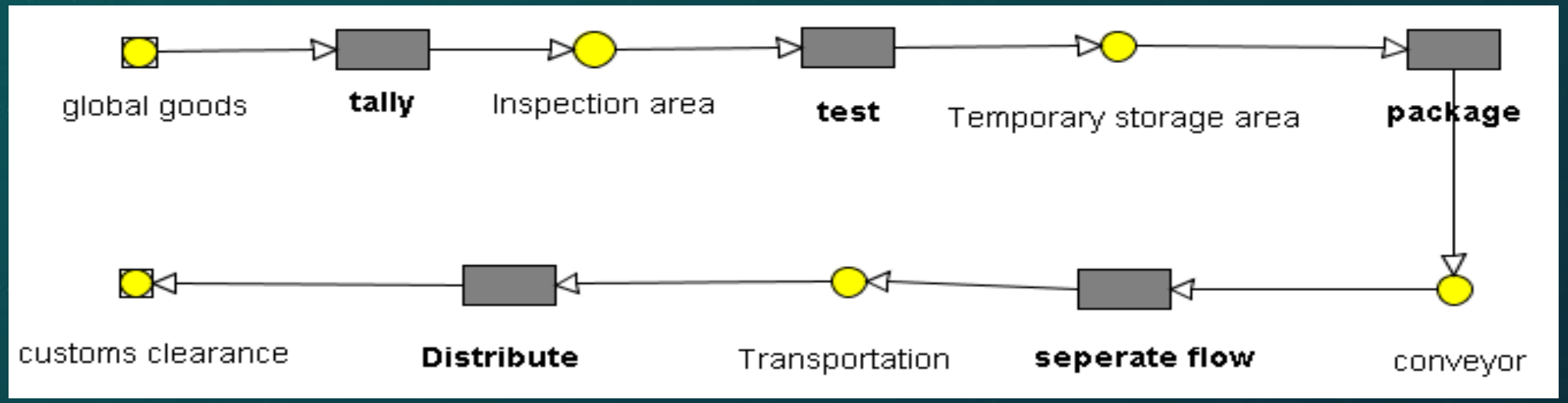
Income Simulation

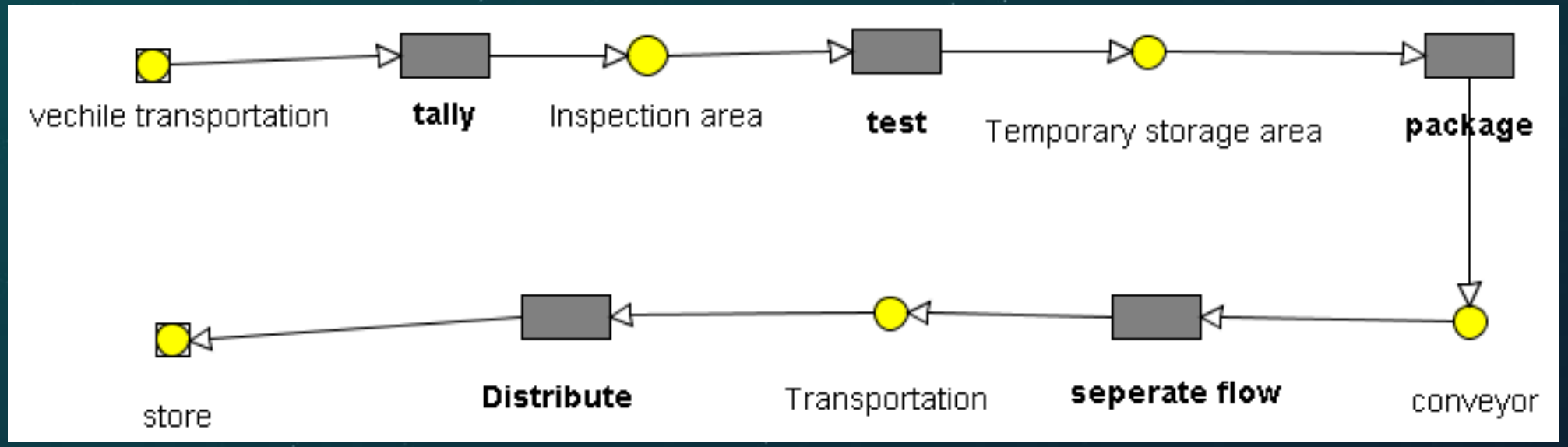
the whole process of cross-border logistics



Income Simulation

The drill down of domestic transportation (Taiwan & China)





Simulation Result

we could see that the time of this logistics process decrease from 604892 seconds to 578972 seconds. The decease rate of time is about 4.386%. And the cost is decrease from 290 to 268. The decease rate of time is about 7.587%.

AS-IS

Domestic Transport (China): Chart | Resources | Resources Chart
Domestic transport (Taiwan): Chart | Domestic Transport (China): Overview
sccom: Overview | sccom: Chart | Domestic transport (Taiwan): Overview

Activities	C...	Execution...	Resource...	Value Add...	Times (Sec...
manage order	1	10	0	0	10
Details of the goods (EDI)	1	2	0	0	2
examinate success 1	1	1	0	0	86,400
Seizure	0	0	0	0	0
pick up	1	0	0	0	3
transport by ship	1	100	0	0	345,600
examinate success 2	1	1	0	0	1
seizure 2	0	0	0	0	0
Domestic transport (Taiwan)	5	78	0	0	86,438
Domestic Transport (China)	5	98	0	0	86,438
Sum	16	290	0	0	604,892

TO-BE

Domestic Transport (China): Chart | Resources | Resources Chart
Domestic transport (Taiwan): Chart | Domestic Transport (China): Overview
sccom: Overview | sccom: Chart | Domestic transport (Taiwan): Overview

Activities	C...	Execution...	Resource...	Value Add...	Times (Sec...
manage order	1	10	0	0	10
Details of the goods (EDI)	1	2	0	0	2
examinate success 1	1	1	0	0	86,400
Seizure	0	0	0	0	0
pick up	1	0	0	0	3
transport by ship	1	90	0	0	345,600
examinate success 2	1	1	0	0	1
seizure 2	0	0	0	0	0
Domestic transport (Taiwan)	5	73	0	0	69,158
Domestic Transport (China)	5	91	0	0	77,709
Sum	16	268	0	0	578,972


6
Conclusion

Conclusion

we complete research about cross border e-commerce logistic service risk

we introduce the method we proposed in this paper, SCCOM, QFD, FMEA and fault tree analysis.

We interviewed several experts. Depend on the survey, it has been transfer into QFD and FMEA

THANKS