

# Applying PReP Model to the Service Development Process

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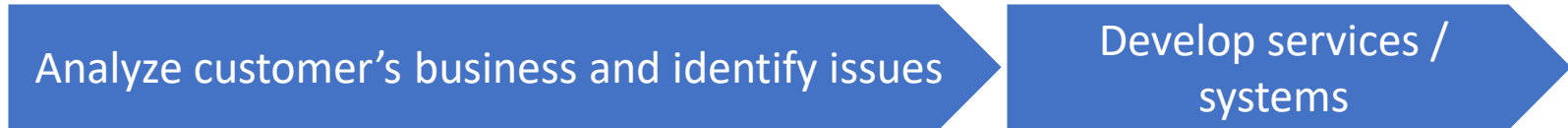
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- 1. Background**
- 2. About the Pilot Project**
- 3. About PReP (Products Relationship Processes) Model**
- 4. PReP Model Based RD Process**
- 5. Applied Process and Methods**
- 6. Project Results**
- 7. Example of Designed Business Process Model**
- 8. Applicability of this Method**
- 9. Problems to be Solved**

## Conventional service development process

- We only had a basic framework for process definition



- As a result, the process and the method of each project were dependent upon the competence of the person in charge of the project



- Inconsistency occurred in quality of customer business analysis and quality of requirement definition
- Traceability between service contents and system requirements was not ensured

## **Issues in service requirements definition process**

- The service being developed was difficult to understand by sales team, business team and system development team
- Excess and shortage of service functions occurred
- The quality of service developed was degraded

## **Issues in system development process**

- Lack of man-hours and schedule delay occurred
- Redo and over budget occurred

## Project

- New service system development for shipping businesses in EU market

## Objectives

- Improving service development processes
- Developing a new service to solve the customer's business issues and win a contract
- Ensure traceability between service contents and system requirements

## Scope and Plan of process improvement

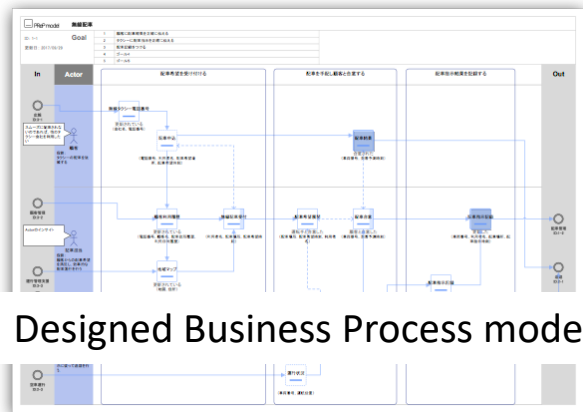
- Apply PReP model based requirements development (RD) process

## Category

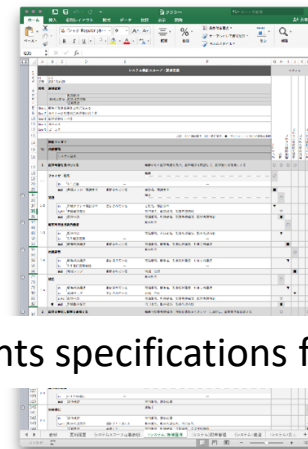
- Business process modeling method

## Characteristics

- Products based and goal-oriented process modeling framework that provides:
  - **Business process analyzing and designing procedure**
  - **Problem-cause analysis and risk analysis method**
- Generate IT system requirements from the designed business process model

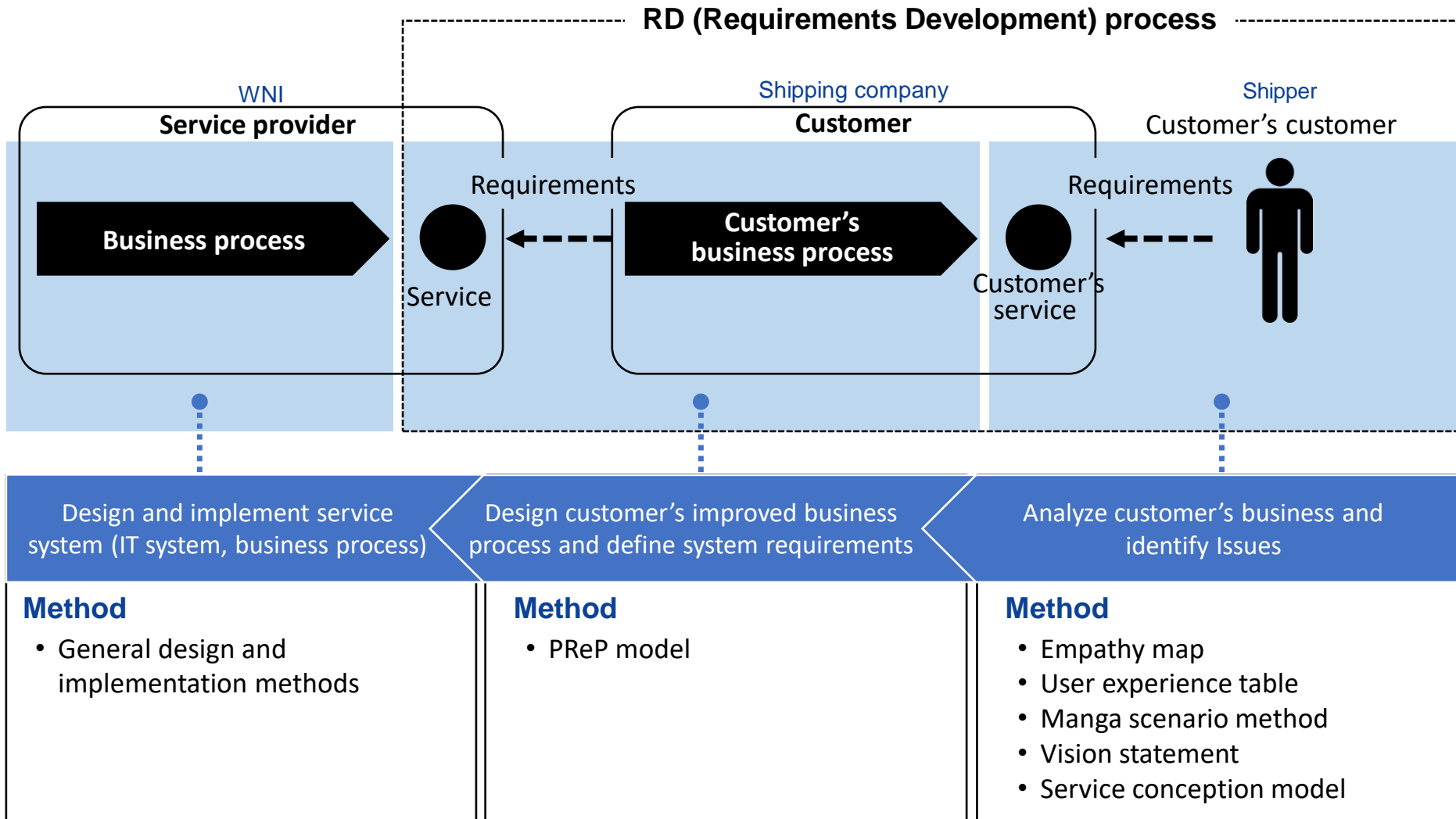


Designed Business Process model

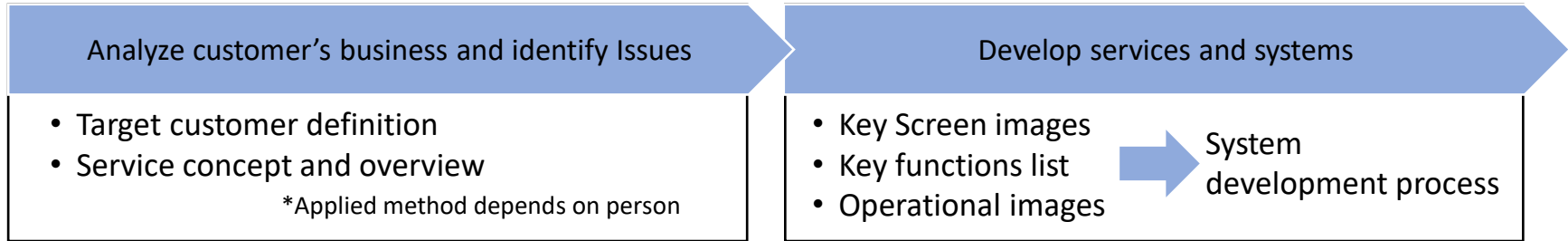


Requirements specifications for IT Systems

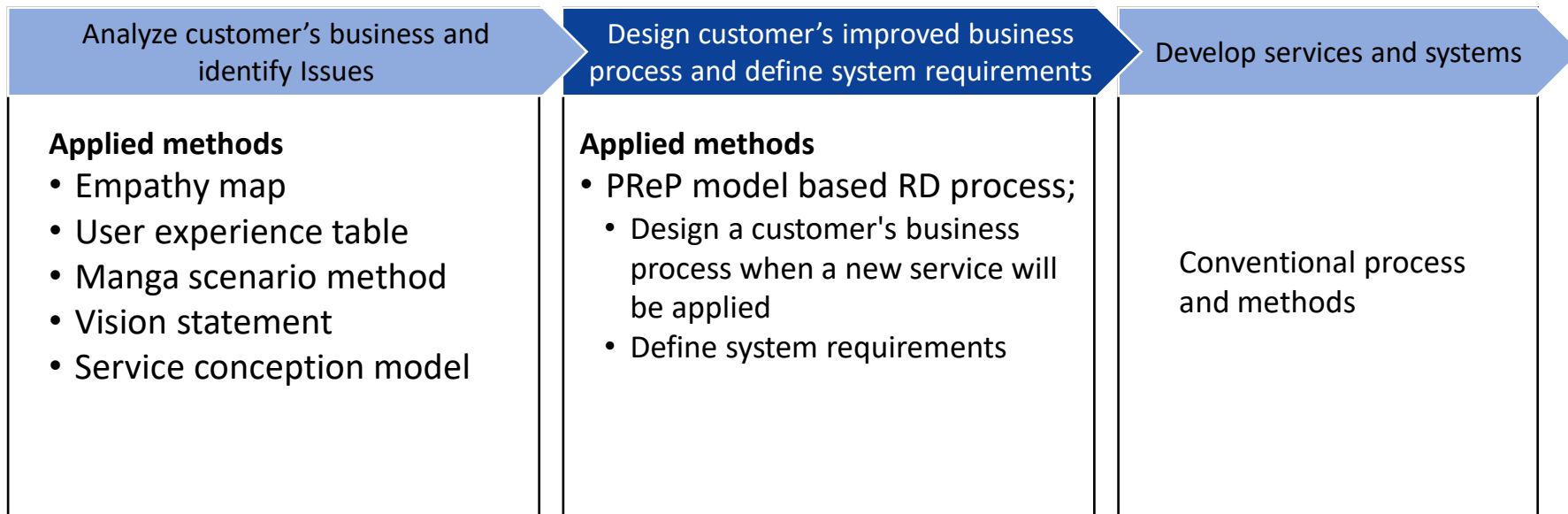
## PReP-based RD process is designed goal-oriented



## Previous process:



## Applied PReP model based RD process and methods:



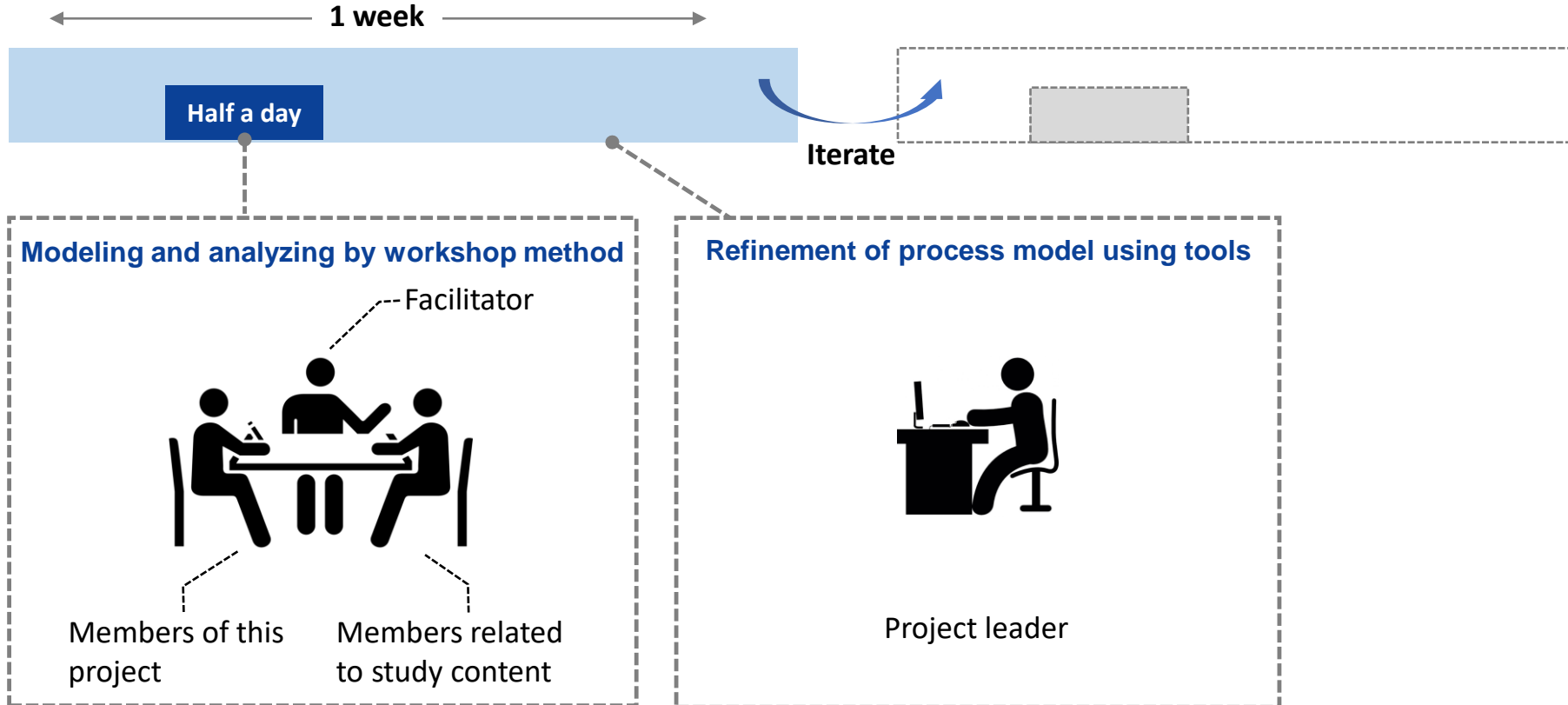


## Project duration




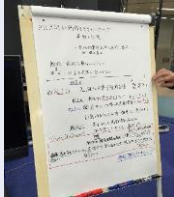
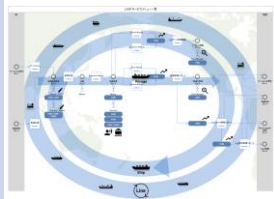
- Initially planned as a 4-months project from April 2016 to July 2016
- However, service scope was changed
- As a result, the project was extended for two months until September 2016

## Process Implementation

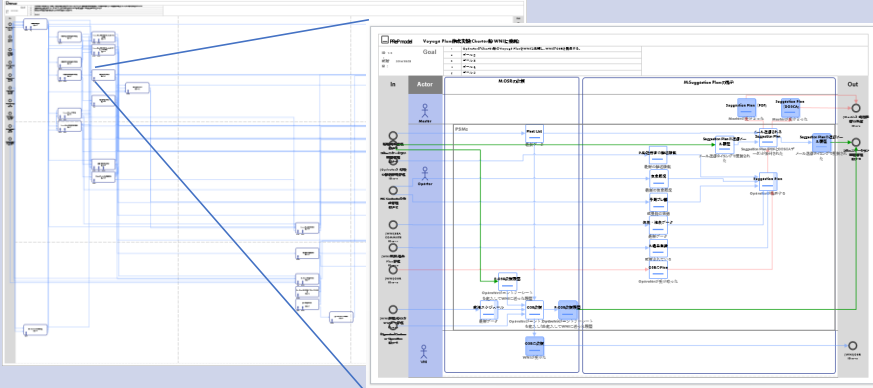
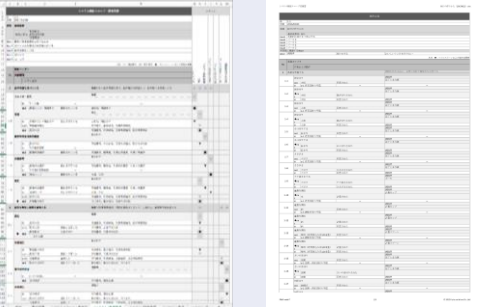
- Workshop was held once a week
- RD process was implemented as an iteration of the collaboration and sophistication work



## Created document

Phase	Contents	Remarks, Sample
Analyze customer's business and identify Issues	Empathy map	Modeling shipping company. 
	User experience table	Analyzing shipping company vs shipper and captain vs operator. 
	Manga scenario	Create scenario when new service is applied. 
	Vision statement	Define the goal of the new service. 
	Service conception model	Draw the new service concept image. 

## Created document

Phase	Contents	Remarks, Sample
<p>Design customer's improved business process and define system requirements</p>	<p>Customer's business process model</p>	<p>Two process areas and 20 business processes.</p> 
	<p>System scope and system requirements Business requirement definition</p>	<p>System scope and system requirements, and business requirement definition were generated from designed business process models.</p> 



## Analyzing designed business process risks and defined system requirements.

**Analyzing actor's insight.**

**図形データ - Actor.81**

Actor名称	Operator
役割	航海計画の支援
インサイト	Masterにcompany policyを守ってもらねば
リスク	Actorに関連するリスク
リスク顕在化確率	(選択)
リスク影響度	(選択)

**Defined system requirements.**

**図形データ - 成果**

成果物名称	Suggestion Plan
状態	Operatorが決定した
パラメータ	船名, IMO No., Voyage No., Dep.Port, Arr.Port, ETD, ETA, Waypoint, FOC, 見天域通過時近, 見天域通過率
成果物種別	中継成果物
リスク	数値では現れないリスクの評価のための過去実績が活かされない
リスク顕在化確率	低
リスク影響度	大
対応システム	6 新規: PSMシステム
作業時間	0
外部機能 (作業)	Comparison Planの比較と選定
システム機能要件 1	Plan選択基準に基づいて選定できる
システム機能要件 2	比較ルートの中から選択する場合、比較ルートに差がなかった場合には、過去実績に最も近いルートを選択する
システム機能要件 3	Comparison PlanとMaster' Intensionを合わせて提示する
システム機能要件 4	Operatorコメントを手入力できる
システム機能要件 5	Planをコメント(PDF, DOSCA形式)に生成する
システム要件 1	Master' Intensionと比較して、Comparison Planの選定理由を理解しやすい形式で提示する
システム要件 2	
システム要件 3	
システム要件 4	
システム要件 5	

**Analyzing designed business process risks.**

## Evaluation from the management viewpoint

- First, we were able to win the contract!
- We were able to think “market in”, not “product out”
  - **It was easy to explain the utility of new services to customers**
- We were able to design the customer's business process when the new service was introduced
  - **It was easy to make decisions and build a consensus**

## Evaluation as service development process method

- We were able to grasp the overall picture of the service specification
  - **Comprehensiveness of requirements was improved**
- We were able to understand the service specification structurally from the viewpoint of customer process
  - **More reliable feasibility study was done**
- Developers were able to understand the function they implement as a relationship with the customer process
  - **Specifications to be improved were proposed by developers themselves**
- Participation of relevant business personnel in improving the quality of system requirements
  - **High quality and reliable service was designed**



## Problems when applying new service to customer

- Difficulty in implementing new service to the workers
  - **New services will improve customer's business. However, in many cases it will request the workers to "change" the way of work**
  - **We should consider not only customer's business process improvements but also work level needs**

## Problems in applying this method

- Difficulty in modeling
  - **It is difficult to think from the point of view of the product**
- Difficulty of managing RD process and applying the method
  - **Our organization depends on the competence of the people in the organization and not on the use of proven processes**

- **We applied the PReP model based requirement development process to the service development project**
- **This method was characterized by defining service system requirements by designing customer's business process**
- **The service developed by this method led to a new contract**
- **We were able to design high quality service that can improve customer's business process**
- **On the other hand, the difficulty of modeling and the problem of establishing processes to the organization remained**

