Business innovation of BPO realized by Task Center and AI and Rule Engine.

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Abstract

- A demand for BPO has greatly increased, but there is room for various improvements in the productivity.
- The improvement of business productivity using AI and rule engine.

1. “Task Center” has a mechanism of collecting various tasks to be tackled automatically from existing systems and aggregating them on the screen.

2. “Dash-board” has a mechanism for allocating tasks to team members optimally according to work volume and skills through business visibility.

Task Center
Concept of Task Center (1)

- Collect information from various systems and applications on behalf of users.
- Create task lists automatically.
- Users can understand what they should do by using “Task Center”.
Collect tasks of the entire team as well as individuals and automatically distribute tasks to members optimally.

Concept of Task Center (2)
Screen of IM-Task Center

Collection of tasks automatically

Estimation of completion date and time accurately

Recommendation of allocation by AI or Rule Engine
Issues that can be solved by Task Center

- Take a lot of time to manage members and allocate tasks
- Not know how to allocate unexpected work.
- Not know the operational status of members.
  -> Can not grasp whether to meet the deadline
- Not know the priority among member’s own tasks
Benefits of Task Center

1) Visualization of all tasks
- Integrated management of various tasks
- Less missed tasks and easier management of progress

2) Efficiency of allocation work
Support for optimal task allocation based on member productivity and workload forecast using AI & Rule Engine

3) Visualization of future forecasts
Forecast of future work such as overtime and cost using information such as work volume and member skills as input data
Demonstration of Task Center
Mechanism of AI prediction and optimization
Mechanism of AI prediction and optimization

- Task type classification
- Estimation of individual productivity
- Prediction of task occurrence in future
- Prediction of standard work hours
- Optimal task allocation based on member productivity and workload forecast
Optimization of task assignment

Solutions for conflicting goals & Restrictions.

- Minimization of work time / save of labor costs / meet of deadlines / Operation leveling
- Compliance with work regulations (labor-management agreement / legal regulations)
- Final decision can be made with human judgment using Task Center
Prediction of task volume

Predicting future task volume and member load situation from past task information.

Prediction with ensemble of regression model and time series model
Prediction of task volume

Estimation of work requests number for each task type on a daily basis up to one month.
Mechanism to collect task information from business system

Business system

Task Center

Acquisition of data

Convert to standard format

Summarize actuals for display

Predict

Machine Learning

<Information to be acquired>
- Operating system name (application)
- What task
- Who
- When (start to end)
- Project
- Work volume (frequency)
- Data volume (cumulative volume)
- Master to access

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Introduction of “Dash-board of business process”
Dash-board of business process (1/2)

Drill down analysis

Future business volume forecast
Dash-board of business process (2/2)

[Simulation Policy]
- Cost saving
- Performance
- Operation leveling
- Current status

[Display Condition of Dash-board]
2018/9/1 〜 2019/2/1
- Incompletion Task

Analysis of past business conditions

Simulation per policy

Number of tasks and volumes per project
Demonstration of “Dash-board of business process”
Analysis of all of the work log including RPA
4. How to create “Digital twin of business process”
• How can you easily grasp the real status of field work?
Process mining

- Technology to identify business bottlenecks from existing system logs and extract processes automatically
- Improvement of the current work quickly is possible while leaving the existing system
Logs can be collected even in environments that do not use the system (1/3)

1. Confirm the digital memo

2. Touch the digital memo and employee ID card

3. Tap the start of work

4. Confirmation of update of digital memo
Logs can be collected even in environments that do not use the system (2/3)
How to create Digital twin of business process

- Get the situation of work in the field in various ways
- Automatic recording of who, when, what and how long
- Touch!
- Logs DB
- Process Mining
- Visualization and processing of work
- Dash-Board
- Automatic generation
- Transformation

BPM
5. Introduce of case study
## Case studies

<table>
<thead>
<tr>
<th>ID</th>
<th>Sector of customer</th>
<th>Contents</th>
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<tbody>
<tr>
<td>1</td>
<td>BPO</td>
<td>Utilization of Task center in BPO work</td>
</tr>
<tr>
<td>2</td>
<td>Call center</td>
<td>Utilization of task center in Call center work</td>
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<tr>
<td>3</td>
<td>Trading company</td>
<td>Utilization of task center in office work</td>
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<td>4</td>
<td>Construction company</td>
<td>Business bottleneck search at construction site</td>
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<td>5</td>
<td>Manufacturing company</td>
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<td>6</td>
<td>Financial company</td>
<td>Business bottleneck search at bank window</td>
</tr>
</tbody>
</table>
Case studies currently underway

- Automating non-routine work

Business operation while AI and humans complement each other

- Routine work
  - Business Operation according to the rules by the rule engine

- Non-routine work with experience in the past
  - Make decisions based on AI recommendations

- Non-routine work with no experience in the past
  - Flexible operation by humans
**Point 1**

The best response to **non-routine work** can be shared with all members

Case Management

Best choice for similar non-routine work

**Point 2**

Change the handling of frequent **non-routine work** to **automatic routine work**

Case Management

Similar non-routine works occur frequently

Defined as a new automated routine work
Transform non-routine work into routine work for full automation

“Case Management” orchestrates not only BPM but also RPA and human operation based on the judgement of Rule engine and AI.
Conclusion
Conclusion

1. Centrally management of tasks using the Task center.
2. Consolidate team tasks and allocate them optimally.
3. Visualization of business conditions and forecast on a dashboard.
4. Creation of digital twin using process mining and other tools even at sites not using the system.
5. Introducing case studies and current challenging.
THANK YOU!