RCCC Capacity Model & Productivity Analysis

Findings and Recommendations

DRAFT

- Background and Key Questions

- Project Approach

- Findings and Conclusions
  - Provisioning Process Flows
  - Average Work Time
  - Order Processing Productive Time (%)

- Recommendations

- Next Steps

- Appendices

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■ **Background and Key Questions**

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The purpose of this initiative was to develop capacity models and capture "actual" productivity at the RCCCs by conducting observations and interviews at selected centers.

— *Background* —

- ■ The situation...
  - • The previous RCCC model was developed in November '99 to support Y2000 budgeting with the following attributes:
    - linked to Corporate Volume Forecasts
    - based on a "top down" approach
- ■ The complication...
  - • The previous model did not reflect the RCCC realities and limits the ability of management to explain budget variances, resource needs and corrective actions
    - did not differentiate productivity differences between products
    - did not include factors such as "rework", absenteeism
    - did not explain expense drivers
- ■ The conclusion...
  - • A structured approach was taken to
    - develop event based models that will enable RCCC Directors to understand expense and productivity drivers, explain budget variances and assess management decisions/corrective actions.
    - calibrate/validate models with historical actual CY 2000 data.
    - incorporate models into Wholesale financial and performance management process.
- ■ The question...
  - • What is the average work time and order processing productive time (%) for each product?

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We focused on the following scope and critical objectives during this initiative.

— *Objectives & Scope* —

Objectives	*Scope*

Objectives

- ■ Calculate Average Work Time (AWT):
    - What are the RCCC process flows for each key event?
    - What is the AWT for each key event?

- ■ Determine order processing productive time (%) - including Rework %, absenteeism

- ■ Develop capacity models

- ■ Validate models with historical data

Scope

- ■ Product
    - Hot Cuts
        - Project Hot Cuts
        - Hot Cuts w/ IDLC
        - Partial IDLC
    - LNP w/ Fallout
    - Snapbacks / Returns
    - DID

- ■ Event
    - Work Distribution
    - CTR1
    - CTR2
    - Date Due (DD)
    - Push Outs
    - Cancels

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- ■ Background and Key Questions

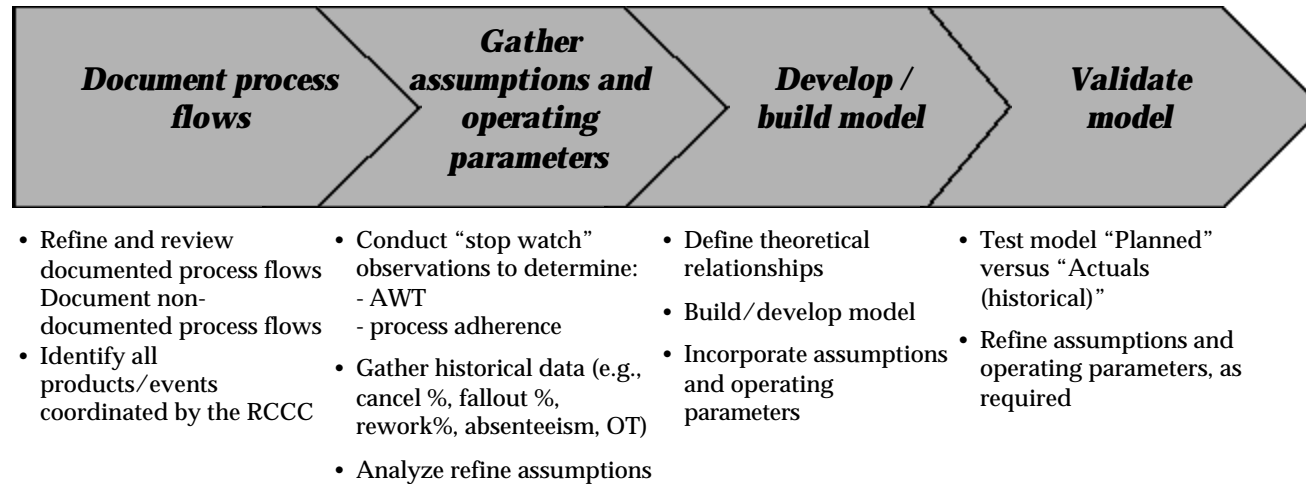- ■ Project Approach

- ■ Findings and Conclusions
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We used the following approach to determine AWT and order processing productive time (%) across the centers.

Document process flows	Gather assumptions and operating parameters	Develop / build model	Validate model
• Refine and review documented process flows Document non-documented process flows • Identify all products/events coordinated by the RCCC	• Conduct "stop watch" observations to determine: - AWT - process adherence • Gather historical data (e.g., cancel %, fallout %, rework%, absenteeism, OT) • Analyze refine assumptions	• Define theoretical relationships • Build/develop model • Incorporate assumptions and operating parameters	• Test model "Planned" versus "Actuals (historical)" • Refine assumptions and operating parameters, as required

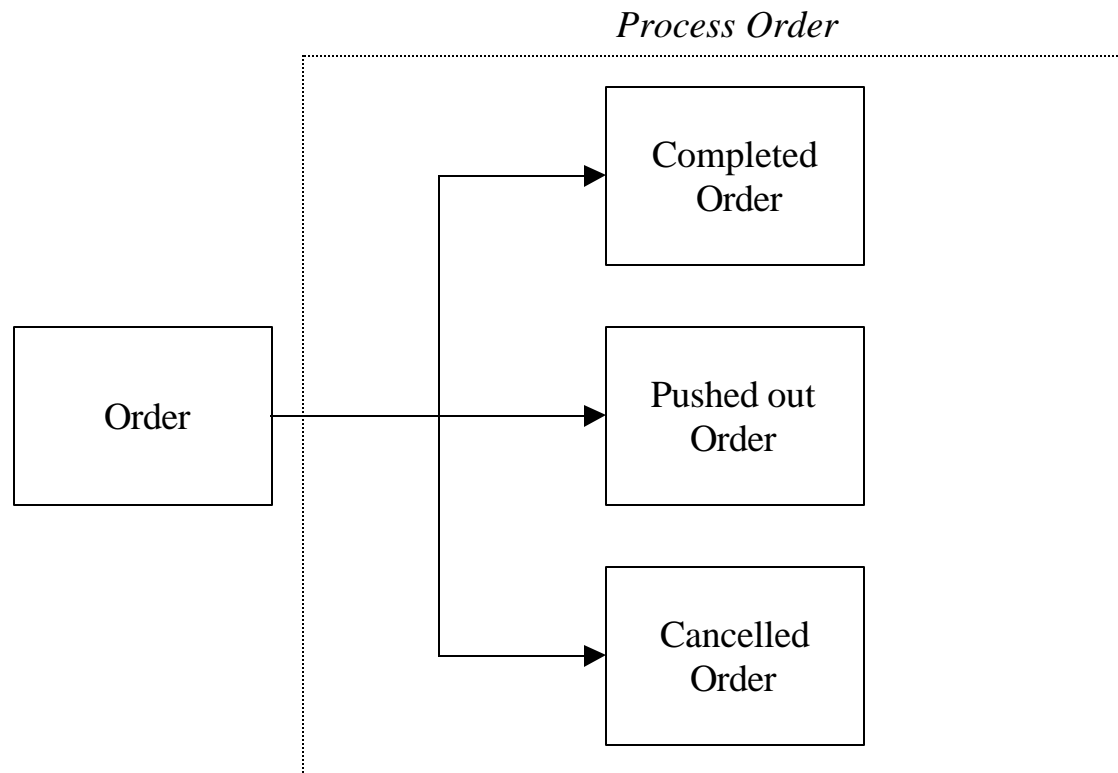## Deliverables

• Process flows	• Assumptions Detailed Worksheets by product	• Capacity Models • Formulaic Expressions	• Validation Results

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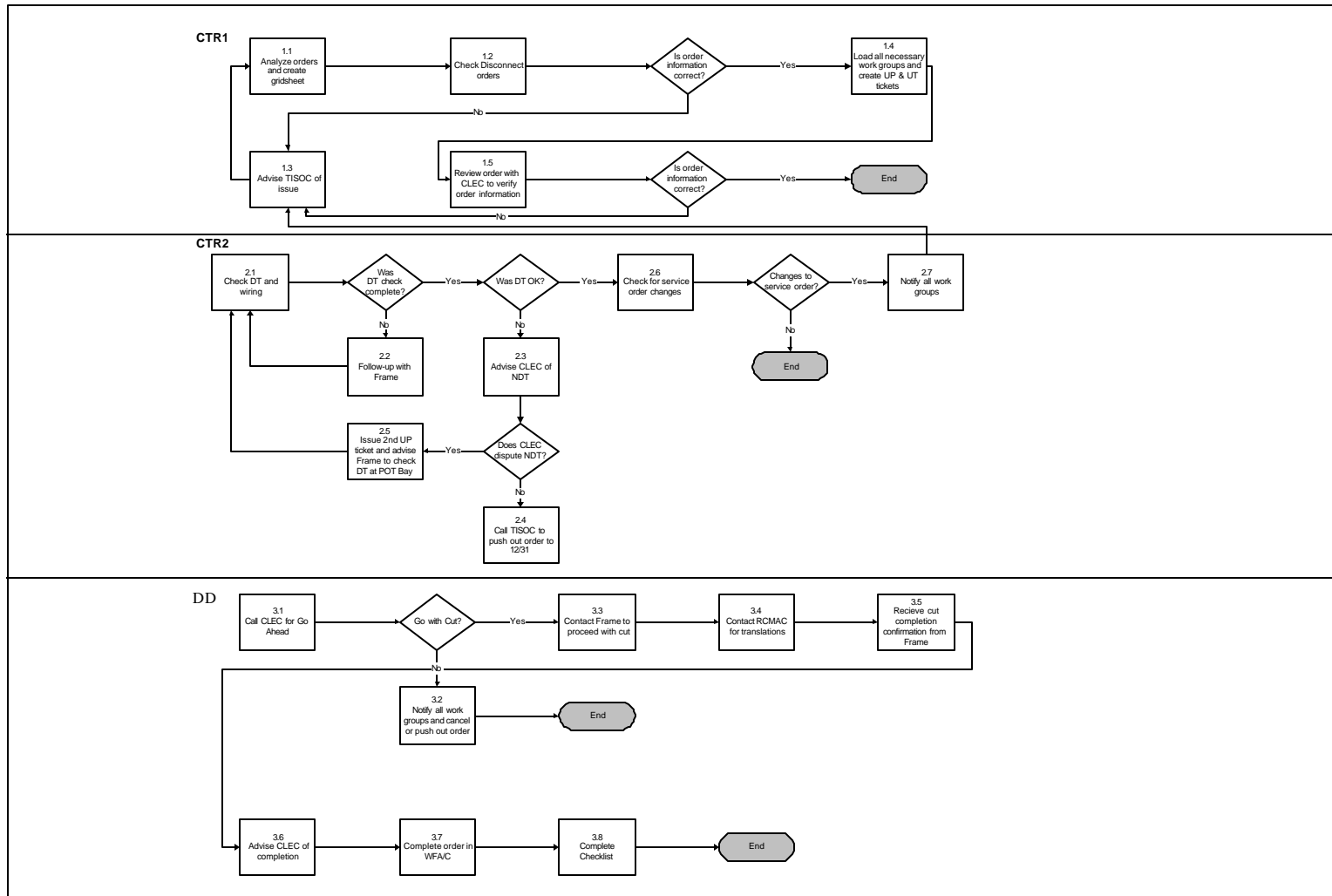Checklist Affidavit, **¶ 164**

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Process flows for all Bell Atlantic products and services were documented after conducting interviews with subject matter experts.

— High Level Provisioning Process Flow —

Process Order

```
                  ┌──────────────┐
              ┌──▶│  Completed   │
              │   │    Order     │
              │   └──────────────┘
┌─────────┐   │   ┌──────────────┐
│  Order  │───┼──▶│  Pushed out  │
└─────────┘   │   │    Order     │
              │   └──────────────┘
              │   ┌──────────────┐
              └──▶│  Cancelled   │
                  │    Order     │
                  └──────────────┘
```

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An example of a typical internal process flow for a Standard Hot Cut Order is shown below.

— *Standard Hot Cut Order Process Flow (CTR1, CTR2 & DD Events)*[*] —

Process flows vary by product. Please refer to Appendix A for a more detailed set of process flows by product.

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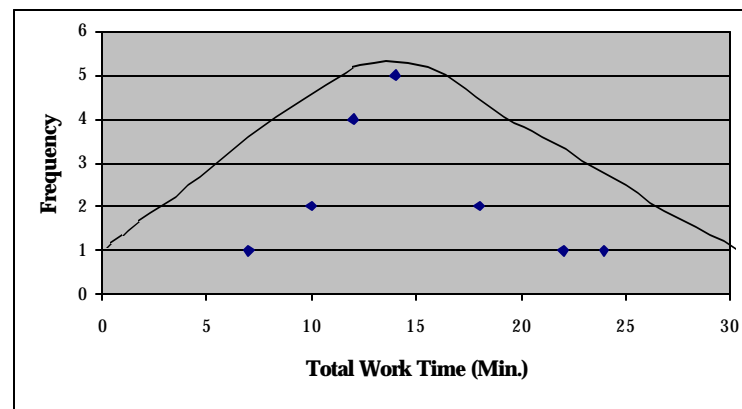## Our objective was to calculate the AWT for each event within each product.

— *Average Work Time*—

■ For the purposes of this study, Average Work Time (AWT) is defined as the actual time spent processing an order.

- The start point is when the service rep. opens the order.
- The stop point is when the service rep. completes all of the event activities.
- AWT includes any necessary wrap-up paperwork .
- AWT does not include time that is not spent processing this service order (e.g., lunch, breaks, answering a question regarding another order).

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We used the following approach to determine the AWT for each event within each product.

How was AWT calculated?

■ A sample of orders were taken for each event within each product type.

■ The order processing time and elapsed time between activities were recorded.

■ The AWT for the sample was calculated using the Trim Mean Function, a statistical analysis function in Microsoft Excel.

- The trim mean of the observations for each event was calculated.

- A 95% confidence level was used.

Average Work Time (Trim Mean) = 12

(Example of AWT calculation)*

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Note:
Actual data was not used in this example

The table below outlines the results of the North average work time calculations.

AWT per Order for "Normal" Completed Orders (using 95% Conf. Level)					
Products	**Work Distribution AWT**	**CTR1 AWT**	**CTR2 AWT**	**Date Due AWT**	**Total AWT**
Standard Hot Cut < 10 lines	4	29	27	21	80
Standard Hot Cut > 10 lines	11	74	45	54	184
100% IDLC	5	53	42	34	134
Partial IDLC	4	32	15	56	107
DID	5	24	17	30	75
Winback	2	0	0	29	30
Projects	630	N/A	N/A	595	1225

AWT per Order for Orders Pushed Out on Date Due (using 95% Conf. Level)					
Products	**Work Distribution AWT**	**CTR1 AWT**	**CTR2 AWT**	**Date Due AWT**	**Total AWT**
Standard Hot Cut < 10 lines	4	29	27	36	95
Standard Hot Cut > 10 lines	11	74	45	87	217
100% IDLC	N/A	N/A	N/A	N/A	N/A
Partial IDLC	N/A	N/A	N/A	N/A	N/A
DID	N/A	N/A	N/A	N/A	N/A
Winback	N/A	N/A	N/A	N/A	N/A
Projects	N/A	N/A	N/A	N/A	N/A

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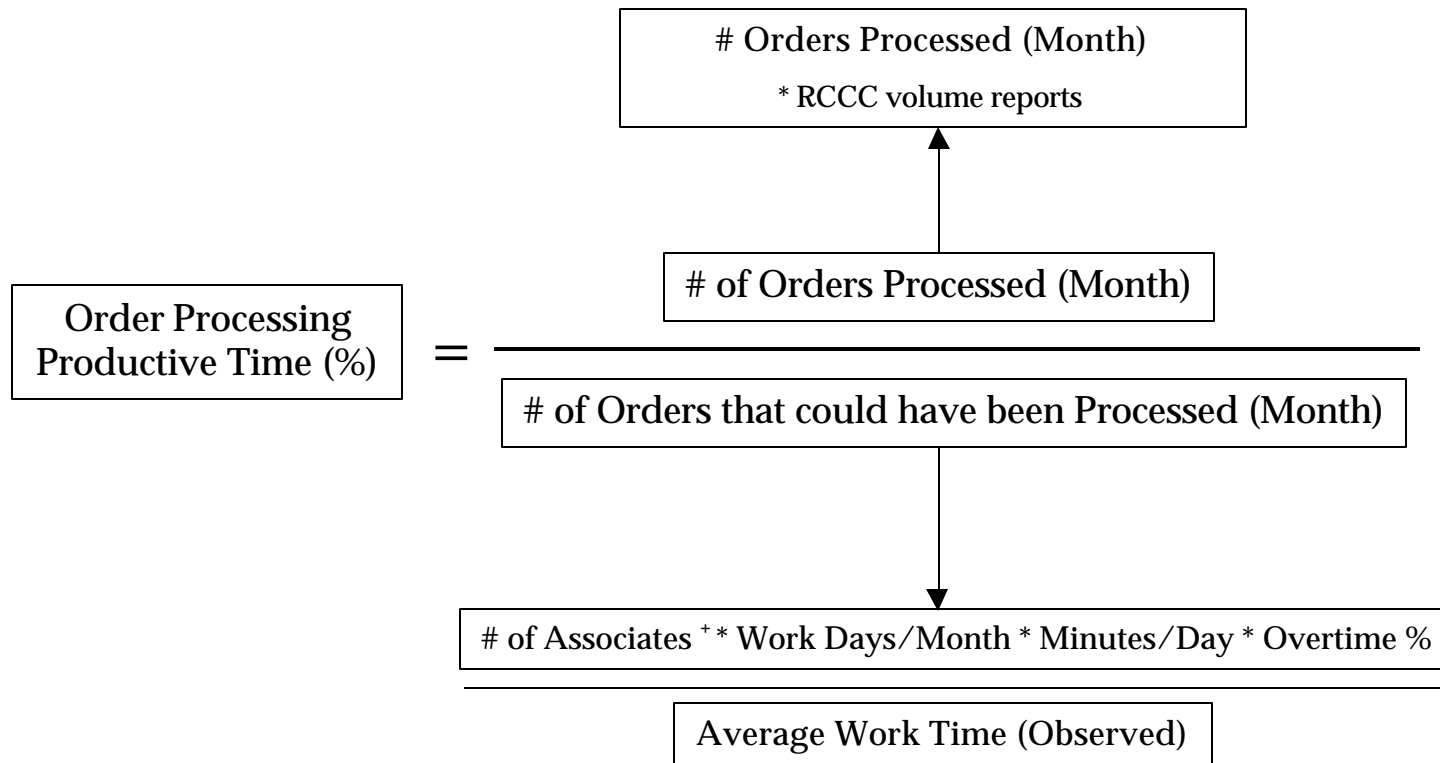Checklist Affidavit, ¶ **164**

A portion of an 8 hour work day is spent on productive tasks. In this study, our objective is to determine order processing productive time (%), a component of overall productive time. Order processing productive time (%) is defined as the percentage of available time spent on order processing tasks, excluding such activities as vacation, breaks, business phone calls, rework, escalations, other productive tasks, etc.

Typical Work Day*

Total Productive Time

Other Productive Time

Order Processing Productive Time

Vacation

Lunch

Breaks

Business Calls

Rework/ Escalations

Other Productive Tasks

Order Processing

8 hours

0 hours
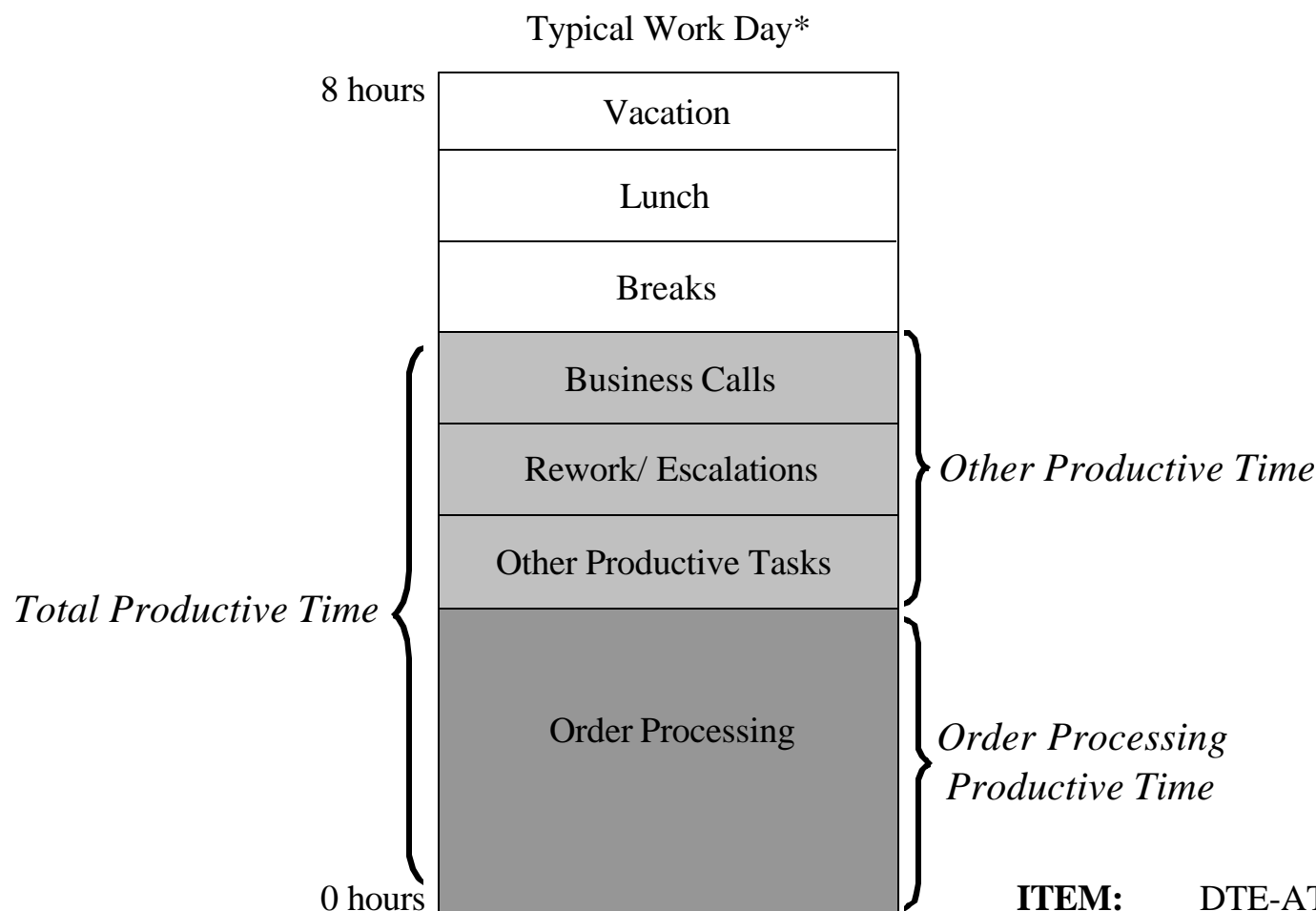
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Note:
* Diagram is not to scale

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We determined order processing productive time (%) by using the following formulaic expressions.

Orders Processed (Month)
* RCCC volume reports

$$\text{Order Processing Productive Time (\%)} = \frac{\text{\# of Orders Processed (Month)}}{\frac{\text{\# of Orders that could have been Processed (Month)}}{\text{\# of Associates} ^+ * \text{Work Days/Month} * \text{Minutes/Day} * \text{Overtime \%}}{\text{Average Work Time (Observed)}}}$$

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The table below outlines the results of the North order processing productive time (%) study.

Region: North	Productivity			
Product	Order Processing Productive Time (%)	Non-Order Processing Productive Time (%)	Total Productive Time (%)	Average Non Productive Time (%)
Standard HC < 10 Lines	30%	35%	65%	35%
Standard HC > 10 Lines	65%	1%	65%	35%
100% IDLC	35%	31%	65%	35%
Partial IDLC	60%	5%	65%	35%
DID	2%	63%	65%	35%
Winbacks	170%	-105%	65%	35%
Project	84%	-19%	65%	35%

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The following recommendations are suggested to improve average work time and order processing productive time (%).

Improve AWT	Improve Order Processing Productive Time (%)	Recommendations
		Proprietary to Bell Atlantic.

1.   Recommendation Number One

<div style="text-align:center; color:red; font-weight:bold;">Proprietary to Bell Atlantic.</div>

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The next step is to identify which areas within the RCCC will be improved in order to enhance RCCC productivity.

— *Next Steps* —

■ Select recommendations that will be applied to improve AWT and order processing productive time (%).

■ Implement changes to improve overall productivity within the RCCC organization.

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- Appendix A - Provisioning Process Flows
    - ù Standard Hot Cuts
    - ù Hot Cuts w/ IDLC (100 % & Partial
    - ù Snapbacks/Returns
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- Appendix B - Average Work Time Results
    - ù North AWT Results
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- Appendix C - Productivity Results
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- Appendix F: Capacity Models
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Appendix Items are Proprietary to Bell Atlantic.

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