How to Perform a High Level Workload Analysis

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ABOUT ME

I've been a sports enthusiast all my life and after playing university basketball and pro women's football, I've learned the value and satisfaction of helping friends and associates solve problems and achieve objectives. My professional career began with sports marketing and evolved to implementing process and technology solutions. Continuing to develop my expertise in business analysis, project management, process improvement and change management, is my current passion!

WHAT MOTIVATES ME	*Low* → *High*
Solving Problems	■ ■ ■
Developing Expertise	■ ■
Competition	■ ■
Salary / Bonus	■
Project Success	■ ■ ■

Presenter Profile

EXPERIENCE

I am currently a business consultant at North Highland, a global management consulting firm headquartered in Atlanta. For the past 18 years, I've helped expand and develop project and operational capabilities for a wide range of public and private sector organizations. My specific areas of expertise include program and project management, business and process analysis, training development and delivery, organizational change management, schedule management and quality assurance.

EDUCATION / ASSOCIATIONS

- PMP®, Project Management Institute (PMI)
- CBAP®, International Institute of Business Analysis (IIBA)
- Prosci® Certification for Change Management
- Certified Scrum Product Owner (CSPO®), Scrum Alliance
- MBA, University of California, Davis
- BA, University of California, Irvine

About North Highland

North Highland is a global consulting firm that has changed the model of how a consultancy serves its clients. We work with the largest organizations in the world – business, government and non-profit – to achieve exceptional results.

- 2,500 professionals across the globe; over 900 in the U.S.
- 53 offices in the U.S. and around the world
- Headquartered in the U.S. (Atlanta)
- Private company; employee owned
- Ranked top 5 in Consulting Magazine's 2014 Best Firms To Work (9th consecutive year)

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Agenda

- Reviewing Value and Waste
- Steps to Perform a Workload Analysis (Level 1)
- Demo of a Workload Analysis Model

Part I: Thinking about “Value” and “Waste” in our Work

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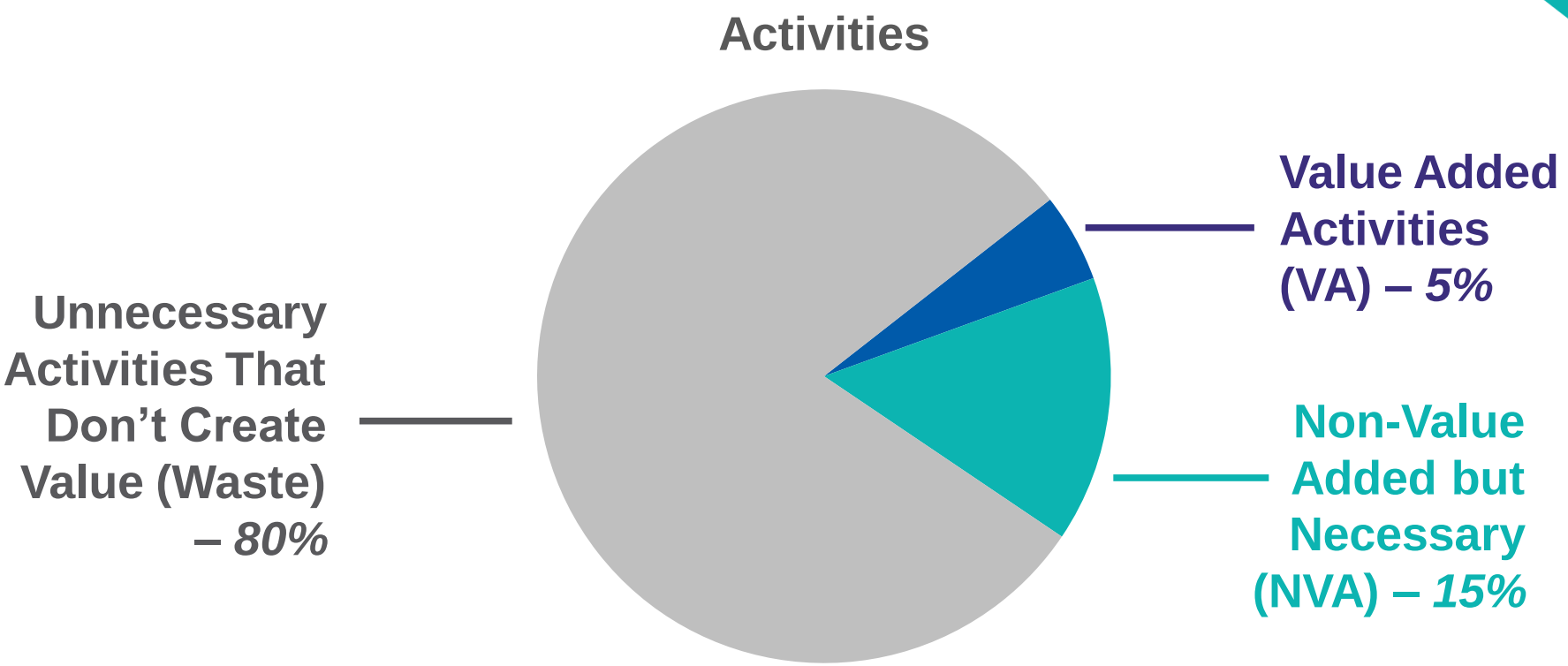
Value Added vs. Non-Value Added *(Lean Thinking)*



In world-class companies, VA is often not higher than 33%, leaving 67% of the process for potential improvement!

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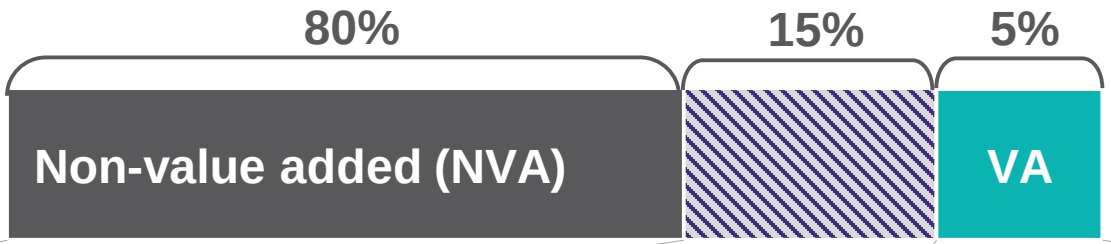
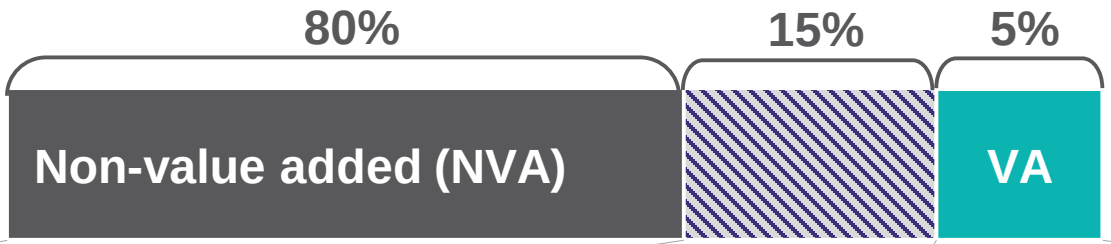
Defining VA and NVA Activities



NVA	NVA But Necessary	VA
• Work or use of resources that **does not add** any value to a product. • **Types of Waste:**  	• Work that does not directly add customer value, but which is currently **necessary to maintain operations**. • Often fulfills some sort of administrative purpose that **enable value added** steps. • Ex: maintaining organizational records, or meeting **legal or regulatory requirements**, setup time, etc.	• **What the customer is willing to pay for**! • Materially **change** the product or service • Done right the **first time** • Work that directly increases the value of the product in the **eyes of the customer**. • Are where you **gain the most from expending your resources** when providing a product or service • Directly **contributes to the creation and delivery** of the product or service to the customer

Lean Improvement Approach



NVA	NVA But Necessary	VA
• Identify in Workload Analysis • Eliminate causes	• Reduce • Rationalize • Automate	• Improve Flow • Innovate

Where there is no value…
There is waste

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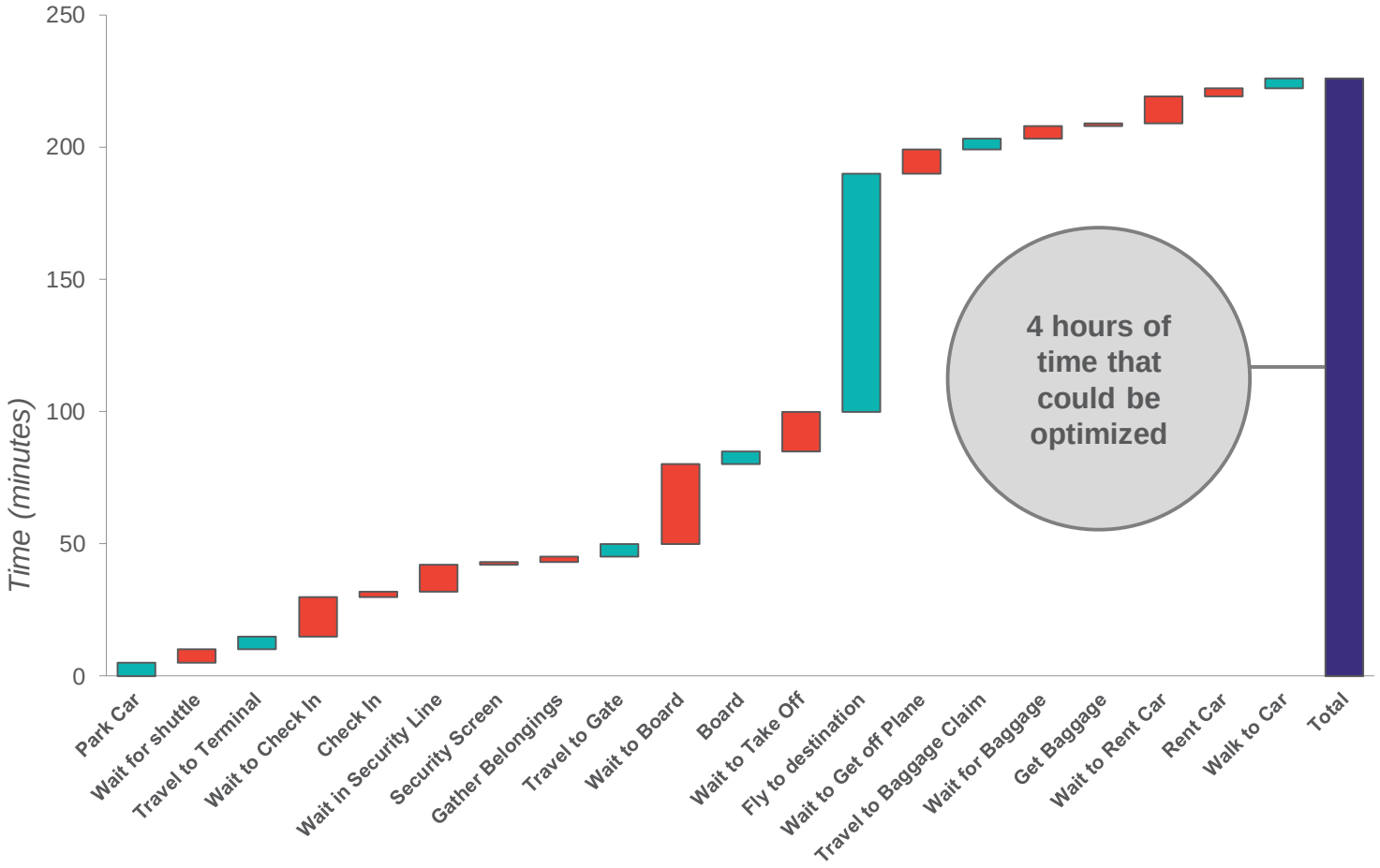
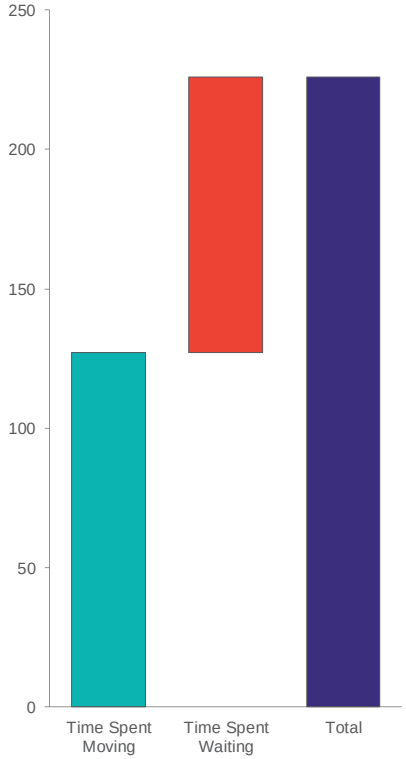
Look for Waste to Eliminate in your Workload Analysis

Example: Taking a Flight



Total Trip Cycle Time

Demonstrates a lot of Non-Value Added Time



Totals: Waiting and Motion

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Part II: Performing a Workload Analysis (Level 1): Goal

A. Identify resource capacity needs.

B. Determine a baseline for current work (value vs. non-value added).

C. Use results to identify areas of improvement with high error rates.

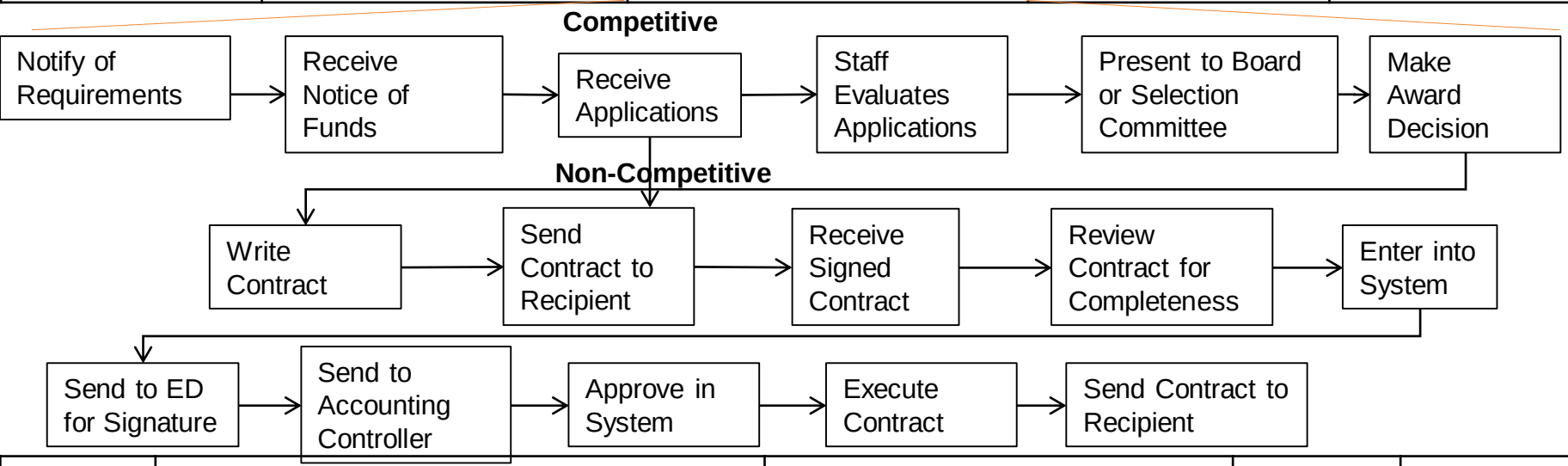
Workload Analysis Activities

- For your overall function, identify job families and work teams.
- Define assumptions and available time.
- Capture workload metrics by defining data for each job family – Level 1.
  - → *Engage workers in panel sessions for averages*
  - → *The formulas you are about to see can be referenced in the Excel tool*
- Analyze and present summary data.

Think of an example you would like to simulate later in our model…

Step 1: Identify Job Families (SAMPLE SIPOC)

Suppliers	Inputs	Process	Outputs	Customers
Grant Applicants Fed Govt State Govt (Controller)	Contract Applications Notification of Funds Available Federal Rules State Rules Rules and Procedures Contract Templates	• Notify of Requirements • Notice of Funds Available • Receive Applications • Evaluate and Select • Write and Execute Contract • …	Contract Reimburse Expense	Recipients Contractors Citizens State Controller Accounting Executive Dir Divisions



Metrics	Input	Process	Output/ Outcome	
	30-50% reduction in procurement cycle time (target from 60 to 30-45 days, start to finish)		# Days for Contract	**Speed**
		Reduced % defects from rework (request sheets, contracts, P.O.s)	% First Pass Yield	**Quality**

Step 2: Define Assumptions and Available Time

Metric	Description	Example
Total Hours for Full Year	Total time if one FTE is working 100% (52 wks x 40h / wk)	2080 hours (173 hours / mo / FTE)
Hours Not Available	Includes vacation, holiday, training, general meetings and other time not included in the operational work.	600 hours
Available Hours / Month / FTE	Total Hours for Full Year minus Hours Not Available = Available Time	1480 hours (123 hours / mo / FTE)
Available Minutes / Month / FTE	Available Time (in minutes) for one FTE per month.	**7,380 minutes**

Step 3: Capture workload metrics with three questions.

Metric	Description	Example
Throughput Volume ***(How Many?)***	Amount of products or transactions that are received, processed or waiting to be processed.	**400 products** received and processed per month
Cycle / Task Time ***(How Long?)***	Heads-down time to complete a process step, excluding wait time.	12 minutes / task (one part of the Total Processing Time)
Defect / Error Rate ***(How Right?)***	Percent of time that the product passes through a process step with a defect in which rework is needed.	20% of time there is a defect (>10% should be investigated)
Total Processing Time	Total time for the job family (from start to finish, from the customer's perspective)	**85 minutes** / product

Step 4: Capture workload metrics – Calculate Takt.

Calculate Takt

$$\text{Takt} = \frac{\text{Available Time}}{\text{Customer Demand}}$$

$$\text{Takt} = \frac{\textbf{7,380 Minutes}}{\textbf{400 Products}}$$

$$\text{Takt} = 18.45 \text{ Minutes}$$

Takt = the **maximum** amount of **time** in which a product needs to be produced in order to satisfy **customer demand**.

The term comes from the German word which means "pulse."

Using metrics is an objective approach to measuring process performance.

Step 5: Determine Employee Capacity Needs.

Determine Number of Employees Required to Meet Demand

$$\text{Employees Required} = \frac{\text{Total Processing Time}}{\text{Takt}}$$

$$\text{Employees Required} = \frac{\textbf{85 Minutes per Product}}{\text{18.45 minutes}}$$

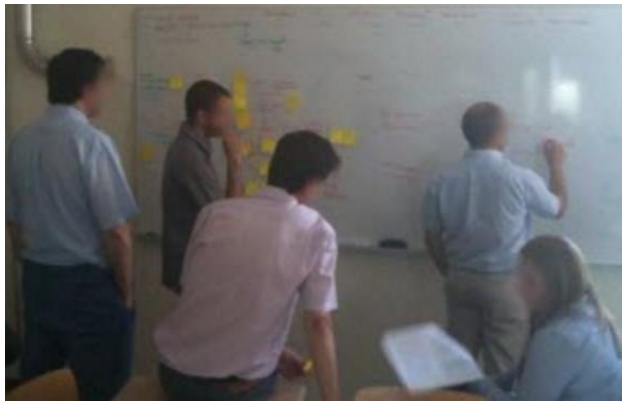
$$\text{Employees Required} = 4.6$$

DEMO: Walk Through the Model

BUSINESS UNIT:	Department Name	Jul-16						TOTAL HRS/MO	AVAIL. FTE HRS/MO	VOL % CHANGE		
JOB FAMILY:	Job Family 1							168	145.00	0%		
#	LEVEL 1 ACTIVITY	AVERAGE MONTHLY VOLUME	PROCESS TIME (MINUTES)	RAW REQUIRED HOURS	RAW REQUIRED FTE	EST. ERROR RATE	ERROR ADJUSTED REQUIRED MIN	ERROR ADJUSTED REQUIRED HOURS	ERROR ADJUSTED REQUIRED FTE	NEW MONTHLY VOLUME	NEW REQUIRED HOURS	NEW REQUIRED FTE
1		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
2		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
3		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
4		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
5		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
6		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
7		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
8		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
9		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
10		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
1	Job Family 1	0	0.0	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00

What example would you would like to simulate?

Capturing workload metrics – Format.



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JOB FAMILY:	Job Family 1							168	145.00	0%		
#	LEVEL 1 ACTIVITY	AVERAGE MONTHLY VOLUME	PROCESS TIME (MINUTES)	RAW REQUIRED HOURS	RAW REQUIRED FTE	EST. ERROR RATE	ERROR ADJUSTED REQUIRED MIN	ERROR ADJUSTED REQUIRED HOURS	ERROR ADJUSTED REQUIRED FTE	NEW MONTHLY VOLUME	NEW REQUIRED HOURS	NEW REQUIRED FTE
1		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
2		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
3		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
4		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
5		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
6		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
7		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
8		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
9		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
10		0	0.00	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00
1	Job Family 1	0	0.0	0.00	0.00	0%	0.00	0.00	0.00	0	0.00	0.00

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Analyzing and Presenting Your Summary Data.

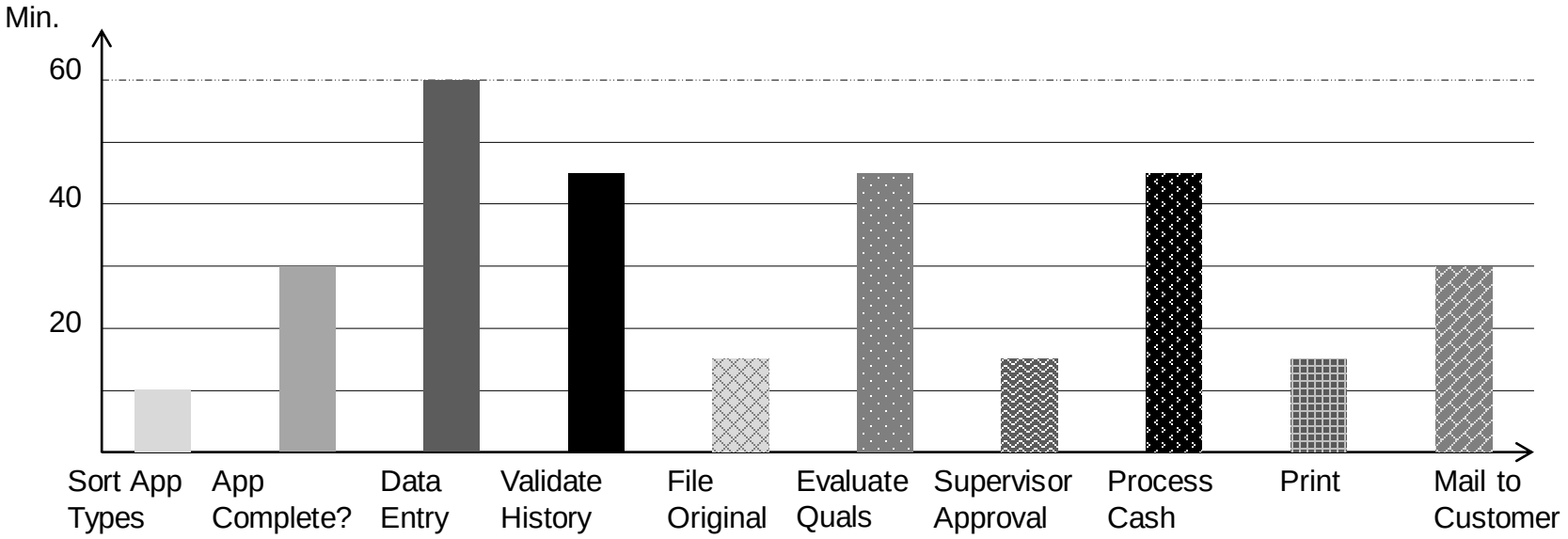
BUSINESS UNIT:	Procurement	Jun-16						TOTAL HRS/MO	AVAIL. FTE HRS/MO	VOL % CHANGE		
JOB FAMILY:	ALL							168	145.00	0%		
#	LEVEL 1 ACTIVITY	AVERAGE MONTHLY VOLUME	PROCESS TIME (MINUTES)	RAW REQUIRED HOURS	RAW REQUIRED FTE	EST. ERROR RATE	ERROR ADJUSTED REQUIRED MIN	ERROR ADJUSTED REQUIRED HOURS	ERROR ADJUSTED REQUIRED FTE	NEW MONTHLY VOLUME	NEW REQUIRED HOURS	NEW REQUIRED FTE
1	Job Family 1	0	0	0	0.0	0%	0	0	0.0	0	0	0.0
2	Job Family 2	0	0	0	0.0	0%	0	0	0.0	0	0	0.0
All	All		0	0	0.0	0%		0	0.0		0	0.0

Recommendations

Job Family	Pain Point	Root Cause	Recommendation	Owner	ETA	Status
Procurement 1	Not enough information, incomplete information, wrong fields completed for service events requests	People/Training	Analyze field level requirements for service requests, ensure mandatory fields are required, formatted for specific data needs	MB	30-Jul	Complete
Procurement 2	outages of prevent ability to view key data	Technology	Improve uptime for key appications or at least advance warning of scheduled maintenance	BP	15-Aug	Ongoing

Current State Example

Processing Times provided by Employees may not be optimal.



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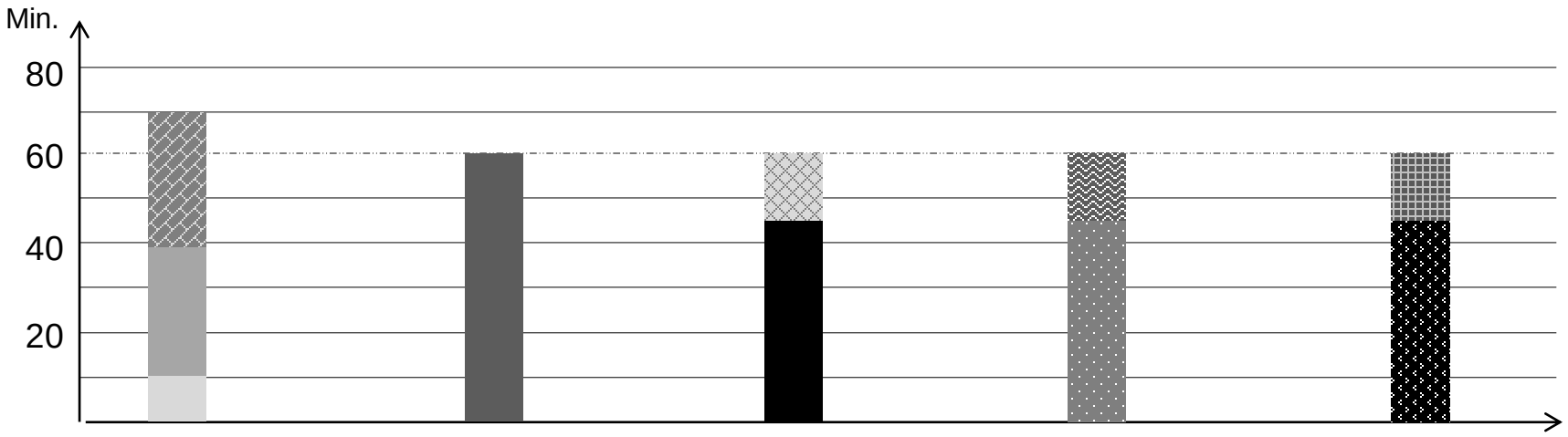
Future State Example

Option to Combine Tasks to Balance Workflow.



Operator 1
- Sort App. Types
- App Complete?
- Mail to Customer

Operator 2
- Data Entry

Operator 3
- Validate History
- File Original

Operator 4
- Evaluate Quals
- Supervisor Approval

Operator 5
- Process Cash
- Print

Wastes – Applying to IT App Dev. & Maintenance

Over-Processing
Over-Production

- Fulfillment of requests that wont be used within the next 3 months
- Unnecessary functionality

Defects

- Bug Fixes
- Conflicting business requirements

Motion

- Requests not tied to business priorities
- Ineffective prioritization of maintenance requests
- Unplanned task switching

Under-Utilization of People

- Limited cross training of developers across multiple applications
- Poor usage of skilled employees and offshoring resources

Waiting

- Key resources not available
- Developers idling because of incomplete information on the request

Inventory

- Maintenance backlogs
- Many partially completed requests

Source: McKinsey Quarterly, "Applying Lean to Application Development and Maintenance," 2007

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Questions?

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