

**reference note 1-429-247**  
**revised December 4, 2012**

## Process Measures: Basic Concepts and Definitions

This reference note describes concepts and defines measures useful for characterizing and analyzing operations processes. Students studying business operations will find these definitions useful as background for thinking about processes, preparing and discussing operations cases, and understanding tradeoffs in process design. Teachers and practitioners may find this note useful to help students and others understand operations processes that they will encounter in classroom and field settings.

**Process Measures** build on primitive system concepts of time, location, and unit.

**Processes** transform input units into output units by the application of resources.

**Units** may be physical objects, customers, patients, or non-tangible tasks.

**Resources** may include capital equipment, knowledge, labor, etc. Resources may operate independently of others or be grouped into pools—that is, groups of similar resources.

**Process Flows** are represented by **Process Flow Diagrams** that illustrate the sequence of steps and locations in a transformation process. In this process, Flow Units:

- Arrive at a process step
- Queue (wait in line) for the process to act on them,
- Are In-Process,
- Wait after processing is complete,
- And Move to the next process step.

*Published by WDI Publishing, a division of the William Davidson Institute (WDI) at the University of Michigan.*

©2012 Eric Svaan. This reference note was developed by Eric Svaan, Lecturer of Technology and Operations at the University of Michigan's Ross School of Business.