



ITT and Process technology

- **Matching the process to strategic needs**
- **Sources of improvement**
- **Standardization and automation**



PROCESS TECHNOLOGY: IN SERVICE COMPANIES

Concept: Match process to life cycle

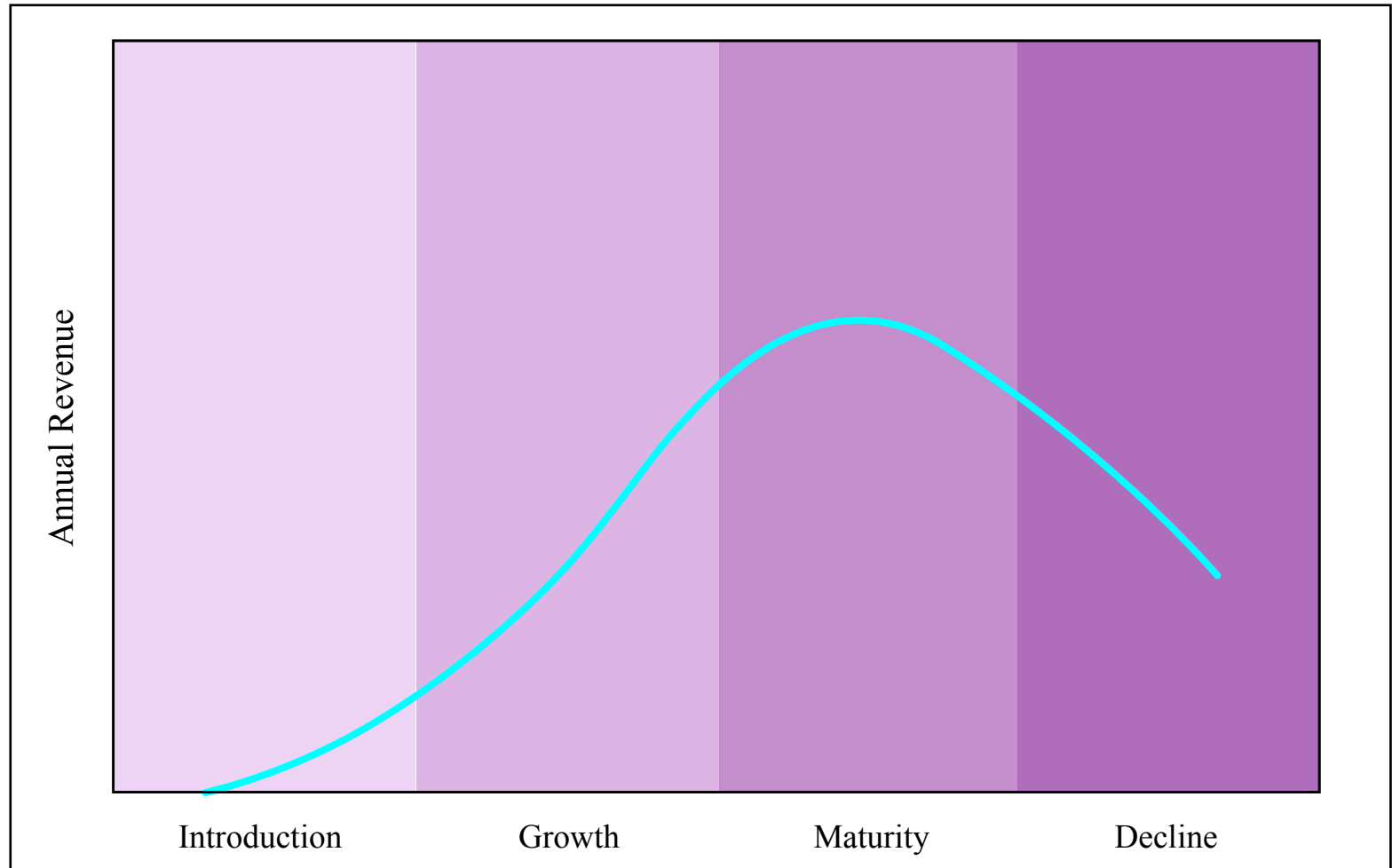
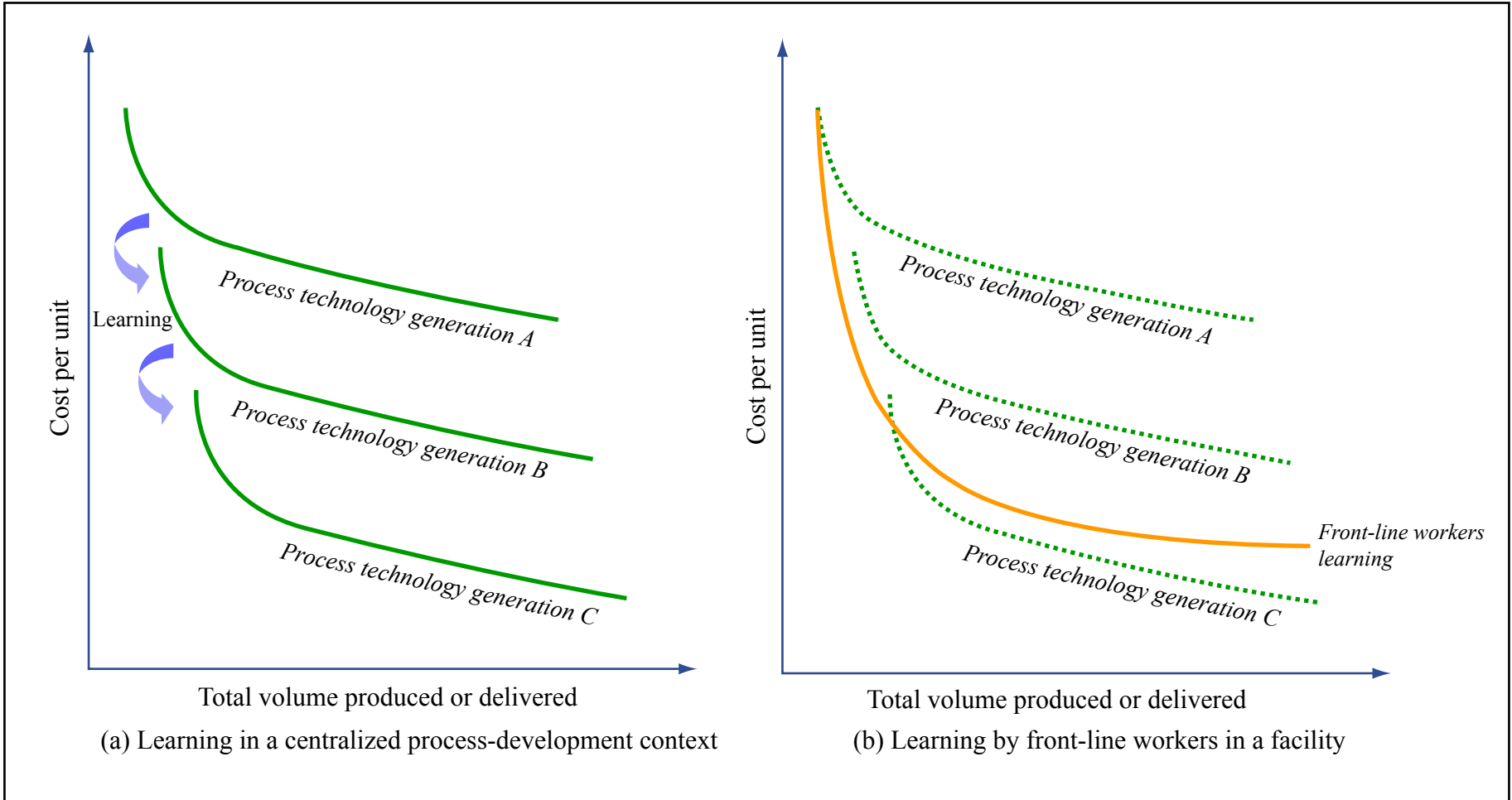


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Sources of improvement: ITT example



(a) Learning in a centralized process-development context

(b) Learning by front-line workers in a facility



Factors in automation

- Business issues such as flexibility and fit with strategy
- Operational issues such as repeatability and precision and effect on performance drivers such as time to market (e.g Pharmaceutical)
- Regulatory issues
- Social issues such as technological environment and workforce implications
- Labor costs
- Sources of improvement and performance drivers



Intel and copy exactly

- Run multiple sites identically to lead plant
 - Process parameters
 - Equipment sets
 - Maintenance
 - Training
 - Specifications/documentation
- Started when fab start-up yields lagged behind development fabs



Copy exactly requires additional structure

- Structure
 - Joint engineering teams and control boards
 - Senior management review
 - Problem is problem for entire team
- Issues?



Standardization factors

- Product standardization (does it vary by market)
- Stability of technology (do new technologies leapfrog or evolve)
- Basis for learning (technology or worker based)
- Levels of volume (eg cars in Brazil)
- Ranges of technologies and impact of labor (can you use manual at low volumes)

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