

# Implementing the toyota production system report examples

[Business](#), [Company](#)



## **Lessons from Personal Experiment**

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### Executive Summary

The report reviews a test scenario of two Japanese inventory control system models in preparation for launch of a restaurant business venture. The Toyota Production System (TPS) and Just-In-Time (JIT) approaches to Business Process Implementation (BPI) planning of the small-medium enterprise (SME) in New Zealand is analysed in feasibility testing scenario of the two models: The Kitchen Inventory Study.

#### - Introduction

The report reviews a test scenario of two Japanese inventory control system models in preparation for launch of a restaurant business venture. The Toyota Production System (TPS) and Just-In-Time (JIT) approaches to Business Process Implementation (BPI) planning of the small-medium enterprise (SME) in New Zealand is analysed in feasibility testing scenario of the two models: The Kitchen Inventory Study.

In preparation for the new business and lead position of Chef at the

restaurant, the foregoing test application of the principles of BPI to the kitchen is in anticipation of the forthcoming mid-December opening of the business. In the test, TPS is compared to another Japanese model of operations control, Just-In-Time (JIT), also perfected by Toyota.

Comparison of the two popular, replicable models allows the business to discern which approach will be the most efficient and effective in implementation in coordination with line-production. The selection of this well acknowledged BPI system is estimate to add value and precision to the restaurant venture once the company's actual enterprise system goes live. The planned quality assurance (QA) system is based on a standard restaurant chain enterprise system. Without adequate QA, there would be some risk to: 1) food products; 2) volume purchase; and 3) direct shipping to store units (Collier and Evans, 2013, 349-350).

In partnership with a third party service provider, the restaurant will follow a similar business processes model in inventory systems control as implemented in the feasibility test of a computer database, continuously updated to ensure food freshness and stock. Zero inventory levels are the goal. The restaurant will deploy a Web Based software application as system (SaaS) operations database for inventory control.

Data from the inventory system will be uploaded automatically to the third party service provider's cloud storage for record, and for administration across the restaurant's supply chain in coordination with vender partners (Christopher, 2003). Data sharing across the value chain will enable the restaurant company to integrate all not only vendors, but also others operations and transaction services in one quality management system. The

goal is to optimize inventory management for precision in audit and compliance.

## 2. 0 Background

The introduction of lean operations management by Toyota in production systems accounting and control over half a century ago, set the pace for global transformation in TPS. Transformations to production in the much replicated Japanese Just-In-Time (JIT) model of production reduces incidence of over or under-applied overhead (Jiambalvo, 2010, 58).

Toyota's job-order system of inventory accounting practices reports manufacturing costs to jobs (Jiambalvo, 2010, 84). Transfer from Direct Material Cost to Work in Process and on completion, Finished Goods, production costs are finalized as Cost of Goods Sold. Record of labor costs in production flow and overhead itemized expenses in the calculation.

Process costing relies upon mean or average distribution of finance to production costs (Jiambalvo, 2010, 84). The method is applied to production of volume homogeneous units over time. Average cost of production is transferred from Work in Process Inventory to Finished Goods Inventory. Multiplication of average unit cost on sale of those goods is record of Cost of Goods Sold (Jiambalvo, 2010, 84).

The classical TPS model applies a "push system" for tracking and reporting of the supply inventory system in support of production. In the case of the restaurant this would suppose that groceries would be pre-prepared food (i. e. production) in anticipation of customer demand. The traditional model pushes vendor supply through the operations system of its client, according to a predefined schedule that is independent of customer demand and is

normally associated with large volume (Collier and Evans, 2010).

JIT systems on the other hand, “ are based on pull-production, synchronizing the entire manufacturing process to the final assembly schedule” (Collier and Evans, 2010). The result is that inventory can be controlled at smaller inventor levels between production stages, resulting in better management of costs and less requirement in terms of physical capacity onsite.

### 3. 0 Method

Methodological design to The Kitchen Study involved instrumentation of TPS (Push) and JIT (Pull) approaches to inventory control. The inventory control system was simulated in a computer program in the test lab, The Kitchen. The test involved 100 simulations of restaurant menu purchases by a control group.

The investigation took a grounded approach to selection of pre-prepared over fresh select, to-order menu options. The goal of the study was to report validity in selection of one inventory control system over another.

Sampling of the control group was drawn from a convenience sample of clients from the restaurant owners’ Facebook network. No test group was required, as the study is not human subject or consumer segmentation focused, but product segmentation in target.

Hypothesis to the study Predicted that JIT would advance the requirements of the business over TPS; reducing order cycle time, office space and investment inventory in the interest of increased profitability. Null hypothesis supports that JIT “ lean techniques can be detrimental to customer services that are based on human interactions” and that the company may be better served by TPS (Collier and Evans, 2010).

#### 4. 0 Results, Analysis and Discussion

The result to the Kitchen Study evidences that in simulated pre-prepared food production according to the TPS model poses risk of loss in response to low demand. While some of this risk may be mitigated after a clientele has been established, and popular items have been tracked according to scale of demand, the initial implementation of BPI as the guiding logic behind the restaurant's inventory control system points to precision in JIT over TPS.

The analysis of the pre-pared inventory data in correspondence with customer demand in dyad analysis of 100 instances of simulated ordering from the restaurant's menu in a product segmentation study of consumer preferences in co-efficient analysis, and in illustration of: proportionality and median frequency.

Reporting of statistical significance to the findings provides important insight into the aggregate selection of pre-prepared options over fresh selections, and also informs standard deviation of risk in spoilage where some plates are not ordered at all. In regard to QA modelling and control the findings suggest that JIT will be more cost effective in meeting the restaurant's strategic inventory goals.

The results fulfil the predicted hypothesis that JIT will advance the requirements of the business is supported by studies of similar ventures where SME have been successful in reducing order cycle time, office space and investment inventory in the interest of increased profitability. The disadvantage faced in making generalizable claims about the result is that "lean techniques can be detrimental to customer services that are based on human interactions" (Collier and Evans, 2010).

## 5. 0 Conclusions

Reporting on JIT performance in the analysis of return on investment (ROI) in the restaurant business is evaluated according to point-of-sale (POS) transactions. To prove effective into the future, JIT must outperform TPS in optimizing inventory control. POS offers continuous tracking of client purchases from the menu. The demand for certain products over others is a critical element of 'zero' inventory strategy.

Installation of the new inventory Saas as part of the restaurant's enterprise system network will integrate multi-channel operations. The restaurant operations value chain includes: enterprise resource planning (ERP), customer relationship management (CRM), supply chain management (SCM) and data administration by way of a third party merchant services provider. Future interface of the restaurant's internal inventory system with the operations network of logistics and transaction tracking will require synchronized data distribution to ensure JIT performance (Christopher, 2003).

## 6. 0 Recommendations

The presence of JIT difficulties at other restaurant operations is illustrated in the Starbucks case of lost profits in response to lean management principles (Collier and Evans, 2010, Naylor, Ben J., et al., 1999). The Starbucks case serves as an important reminder that lean strategies of inventory control are potentially "best suited to assembly lines and factories [rather than] managing direct consumer demand (Collier and Evans, 2010). As the restaurant grows it may be pressed to improve QA in control of volume product, its preparation, and sale.

SaaS components will assist in development of a vital QA program.

Continuous training of employees in user interface and in company policy to ensure new QA systems of procedure and processing are met is recommended. This will further the company's ability to meet performance benchmark reporting, regulatory compliance audits and quality objectives connected with sales and customer satisfaction.

## References

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