**Videos/Cases 11e**

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**Crayola: Using Operations to Create Value at Crayola**

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| **Length:** | 07:50 |
| **Subject:** | Using Operations to Create Value at Crayola |
| **Textbook Reference:** | Chapter 1: Competing with Operations, page 27 |

**Summary**

This video discusses the operations and supply chain strategy and challenges at Crayola, the world’s leading company in arts and crafts products. A set of supply chain leadership principles are defined as cost, innovation, quality & ethical responsibility, sustainability, and resilience and agility. These principles are derived from the daily decisions Crayola faces such as choosing colors to drive demand, and launching new products while maintaining quality standards. As the supply chain grows globally and the company enters new foreign markets, operations challenges arise in managing fluctuating demands and a complex supply base.

**Key Concepts related to the chapter**

The video case includes rich discussion avenues in operations strategy, competitive priorities and capabilities. Also, the written case in the textbook covers Crayola’s potentially new markets in China, which creates challenges as well as opportunities. The instructor should make sure that students understand and become comfortable in applying the core concepts of operations strategy and competitive priorities/capabilities to this case.

*Operations Strategy*

The corporate strategy and market analysis of Crayola can be discussed in detail. In order to develop a corporate strategy, Crayola first monitors and identifies adjustments that need to be implemented. Already being the dominant player in the North American market, Crayola is now looking for new markets overseas including China. Consumer needs are becoming more diversified than ever, and a large portion of purchasing takes place online. Crayola has strong core competencies in terms of customer-focused culture, strong innovation capabilities, and reliable product quality. Another key issue to be pointed out is their strong focus around environmental sustainability, which originated from the founders of the company. By leveraging their core competencies and adjusting to these external changes, Crayola strengthened their operations management functions and supply chain management activities. Four key strategies were developed -- international expansion, consumer commercialization, dot.com strategy, and Crayola experience. Two points to consider for the international expansion are that what works well in their home country might not work well elsewhere, and secondly, it is important to choose the appropriate entry strategy such that it can ward off fierce competition and overcome cultural frictions.

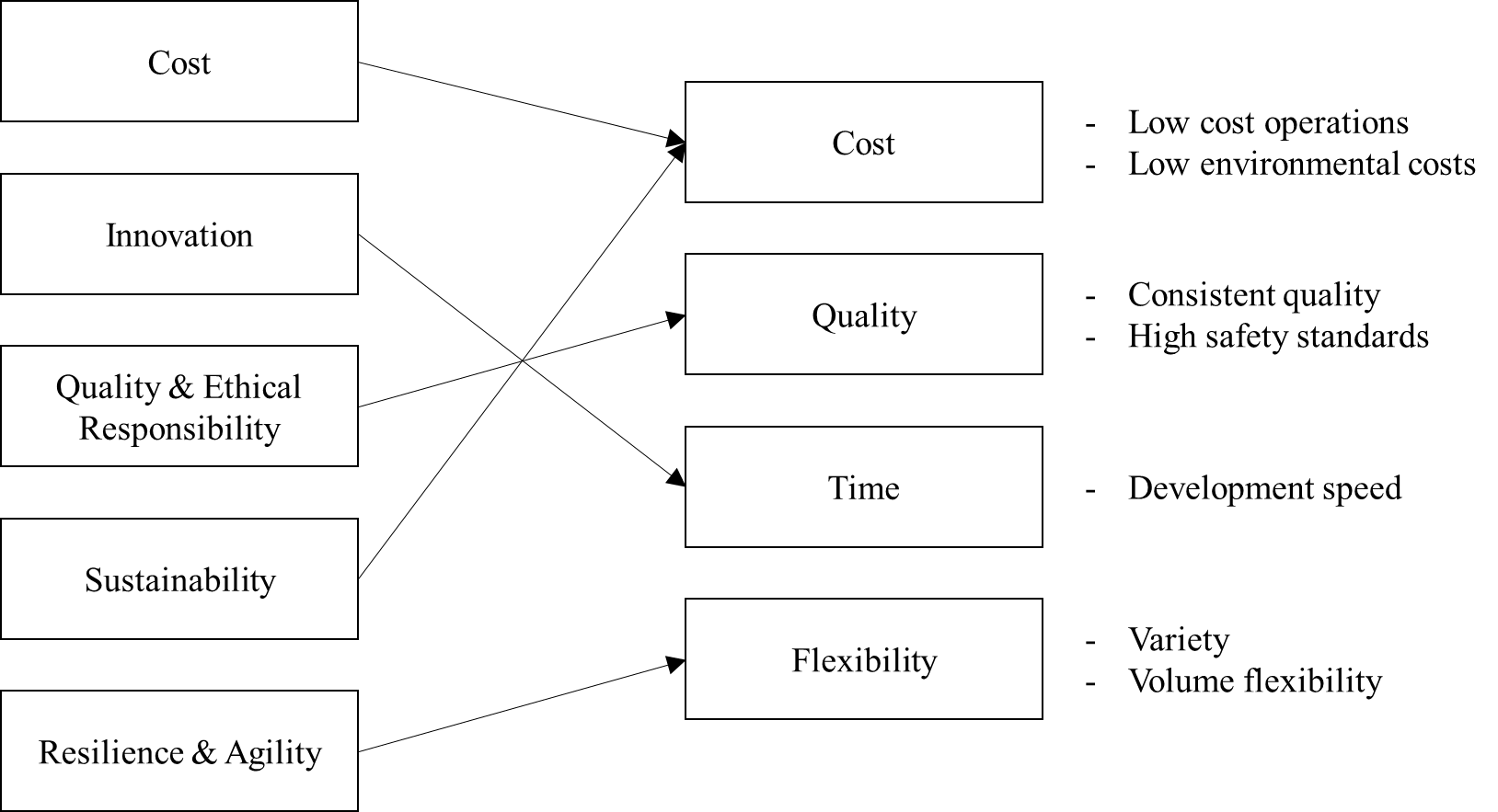
*Competitive Priorities and Capabilities*

The competitive priorities of Crayola are characterized by its five principles. These critical operational dimensions can be elaborated in detail based on the case information. Crayola focuses on environmentally sustainable low process costs, high safety quality, and high flexibility that enable the company to cope with uncertainty. Competitive priorities of cost, quality, time, and flexibility should be critically evaluated to make sure that its achieved competitive capability goals are met. Students should be able to make clear distinctions between priorities (targeted) and capabilities (achieved) in order to address the discussion questions at the end of the case.

Another useful way to assess a firm’s ability is to use the order winner and order qualifier framework. In the video, Crayola’s customers mention order qualifiers as givens, and include consistently top quality, quick and on-time delivery, new product innovation, customized products and displays, variety, and flexibility. Order winners on the other hand, are mentioned as color selection (market knowledge), innovation, and high product reliability.

**Discussion Questions Based on Video**

1. Map Crayola’s five pillars of operational leadership to the competitive priorities in Table 1.3.



* The figure above shows an example of mapping the five pillars to the four competitive priorities. The pillars can be translated as having low operations and environmental costs, consistent and safe quality levels, fast new product development speed, and high responsiveness via customization and volume flexibility.

2. Create an assessment of Crayola’s competitive priorities as it relates to their Asian expansion plants.

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| **Competitive Priority/Pillar** | **Measure** | **Capability** | **Gap** | **Action** |
| Low cost Operations | Production cost  Transportation cost  Material cost | Mostly sourced in USA  Automated with US workers | Foreign expansion causes additional costs | Multilanguage packaging  Offshore production and sourcing |
| Sustainable efficiency | Carbon dioxide emission  Energy consumption | Recycled plastic  Reforested wood  Solar farm | Acceptable | No action |
| Consistent quality | Percent defects  Rework, scrap  Product returns | High consistency in packaging and product quality | Acceptable | No action |
| High safety quality | Certifications  Chemical use | All products are non-toxic | Acceptable | No action |
| Development speed | New product time to market | First to the market with every innovation | Acceptable | No action |
| Variety | Product mix range | Wide variety of colors | Acceptable | No action |
| Volume flexibility | Utilization  Order-fill rate | Maintains capacity and integrated supply base in US | Less responsive to overseas demand fluctuations | Postponement  Modular process |

3. Which of the competitive priorities might present the biggest challenge to Crayola as it expands internationally?

* In order to maintain their emphasis on quality and environmental sustainability, Crayola sources most of the required materials from USA. However this practice could be put into question when they decide to aggressively expand to overseas markets. Studies show that locating production facilities in foreign countries and increasing the local presence reduces customer aversion and enhances market penetration. Crayola would also have to decide whether the benefits arising from the low production cost in the Chinese labor market are sufficient to overcome the disadvantages associated with technology leakage, political risks, quality risks, and increased competition.

**Manufacturing Process Structure Choice**

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| **Length:** | 06:37 |
| **Subject:** | Manufacturing Process Structure Choices |
| **Textbook Reference:** | Chapter 2: Process Strategy and Analysis, page 78 |

**Summary**

This video explains the four categories of process structures with detailed examples. A burritos Mexican restaurant is introduced as an example for the job process. WT Graphix Apparel manufacturer shows an example of the batch process. The manufacturing process at Crayola has the characteristics of a line process, and finally the oil and gas industry is introduced as an example for the continuous line flow process. The detailed characteristics of each process are explained in accordance with the textbook’s discussion on the product-process matrix.

**Key Concepts related to the chapter**

The product-process structure matrix is prominently featured in the video case along with the examples and the characteristics of each type of process. It is important for students understand the main difference between the four types of processes, and decide which process matches well with the characteristic of a given industry or product. Students may experience difficulties in differentiating between each process, so it is important for the instructor to provide rich anecdotes and comparisons.

The job process in the case of the Mexican restaurant is described to have low volume, high resource flexibility, high customer involvement, and low capital intensity. The batch process, WT Graphix custom embroidery and silk screening, has single batched customer orders because of the wide variety of customized orders. The process ensures high flexibility with low setup costs, and workforce plays a large role in the setup, monitoring and controlling. Capacity expansion is easy in the batch process. The major difference between the job process and the batch process is that, the batch process has higher volume of each type of product manufactured repetitively, moderate flexibility because of the shared equipment, moderate degree of customer involvement, and moderate capital intensity.

The line process has high volume, low resource flexibility with line flows, less customer involvement, and high capital intensity. The continuous flow is characterized as having a high-volume standardized production with line flows, and the output is considered to be a commodity. Equipment is specialized, and both process flow and workforce have very low flexibility. The students often find it difficult to clearly distinguish the characteristics or examples between the line process and the continuous flow process. The instructor should focus on providing clear explanations on the differences between these two types of processes. The continuous flow process differs from a line process in that materials will flow through the entire process without stopping for days, weeks, or perhaps even months. This situation depicts the fact that while the line process will need to have buffer inventory of raw materials between each step to maintain the line flow, the continuous process will not require such buffers because the flow is continuous.

Another point to be made clear is the usage of the product-process matrix. Instead of trying to distinguish the characteristics between each process, the framework should be understood in the context of identifying and understanding the key factors that drive process structure decision. Even within an industry, manufacturing the same product, the process structure may differ because of the layout and strategic priorities the business is focusing on. We may see a job process restaurant, but also a batch process restaurant based on the product offerings and the strategy each business is maintaining to differentiate itself in the marketplace.

**Process Analysis at Starwood**

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| **Length:** | 12:44 |
| **Subject:** | Process Analysis at Starwood |
| **Textbook Reference:** | Chapter 2: Process Strategy and Analysis, page 91 |

**Summary**

The video for this chapter highlights the stewarding function at The Phoenician resort in Scottsdale, Arizona. Stewards play an important back-of-house function within the food and beverage department. Tasks include dishwashing, silver polishing, restaurant glassware and linen management, and support to the resort’s eight kitchens, as required by the executive chef. A recent company-wide initiative, called the “Power of Innovation,” (POI) was created with the help of Starwood’s Six Sigma Black Belts to focus attention on process improvement. Students will hear from Rick Suhl, Southwest Regional VP Operations as he discusses what the Power of Innovation program is all about. Eve Schremp, Starwood’s Southwest Region Black Belt talks about the issues the team uncovered when they visited, and how the stewarding function was chosen as the first process to be analyzed. The tape contains a “pause” point after the stewarding process is described so that students can discuss their ideas for redesigning the stewarding process. The video wraps up with comments from the POI team about the redesigned process, and why it was chosen.

**Essay or Discussion Questions Based on Video**

1. How can the management specifically improve the stewarding process at The Phoenician? Using the information provided, create a flowchart illustrating the new process that can be used at The Phoenician.

* Management can focus their attention in two areas: staff work shift scheduling and kitchen assignments. First, staff should be scheduled to meet the demand of each kitchen without requiring “downtime” for individual stewards. This may mean shorter work shifts or re-assignment to work at more than one kitchen. Additionally, transport carts, such as golf carts, make sense for rapid movement between geographically distant kitchens. If the carts are already in inventory (as part of The Phoenician’s golf club), then transferring the asset’s cost to the stewarding area may be non-incremental to the resort’s overall financial results.



2. What are the benefits that the POI program can bring to Starwood? Can these benefits be extended to other processes and properties within the Starwood system?

* The POI program can bring significant workflow and financial benefits to Starwood. These benefits include streamlined workflows for the areas under examination. Redundant or unnecessary tasks can be eliminated. Financially, the labor hours saved translate directly to payroll savings, which is a line item on the company’s financial statements. The creation of the program was designed to capture the best practices at individual hotels for the purpose of sharing them across all brands, so these benefits should be extended to other brands, as per the POI Team’s charter. It may take time, however, as Starwood has over 750 hotels, and with the POI Team staying a week or more at each location to examine and document existing processes, those benefits will be spread over many years. The benefits may be achieved faster if the individual hotels embark on the process changes without the direct assistance of the POI Team.

3. Of the seven mistakes organizations can make when managing processes, which ones might Starwood be most at risk of making? Why?

* The seven mistakes are: (1) not connecting with strategic issues, (2) not involving the right people in the right way, (3) not giving design teams and process analysts a clear charter and then holding them accountable, (4) not satisfied until fundamental reengineering changes are made, (5) not considering the impact on people, (6) not giving attention to implementation, and (7) not creating an infrastructure for continuous process improvement.
* Mistake #1 Risk Assessment: Very little. The creation of the POI Team was driven by a corporate need to capture the best practices from within its hotels, and share them across its brands. This certainly is a strategic approach. Although it is not noted in the case, the selection of POI Team members with expertise in kitchen preparation and production, stewarding, front office and housekeeping signals that these “low level” operational processes carry significant productivity and cost implications, that, when multiplied by 750 hotels, can be dramatic. Starwood’s approach at each hotel requires initial examination of the individual’s hotels financial results (referred to as the “P&L,” or profit and loss statement) to determine how large the opportunity for improvement might be.
* Mistake #2 Risk Assessment: Little to none. The POI Team experts visit a property over a week’s time in order to become acquainted with how the work is done at that location. Time studies were performed with actual staff (although being watched usually brings out better performance) to get a sense of how long work was taking. Flowcharts documented the order of tasks as well.
* Mistake #3 Risk Assessment: Little to none. As noted earlier, the POI Team was charged with capturing best practices that existed throughout its hotels across all brands in North America (where the bulk of Starwood’s properties are located). Key managers for areas under review participated and held accountable, based on P&L results for their area.
* Mistake #4 Risk Assessment: Very little. The POI Team visit did not seek to overhaul the existing processes. Instead, the team theorized that small changes made to scheduling (both hours worked and kitchen assignments) and equipment deployment could make a big difference in productivity. The flowchart from Question #1 illustrates this simple change. Would the POI Team make more radical recommendations in another location, or at a different hotel? It’s possible, especially if they discover that existing processes are dramatically different from “best in class” at other hotels. Yet hotel general managers are quick to note the financial implications of poor productivity, so it doesn’t seem likely there would be resistance if the experience documented at other properties (labor hour and dollar savings) were achievable at their hotels.
* Mistake #5 Risk Assessment: Some. The POI Team recommendations must ultimately be implemented by the managers and employees after the team leaves. Depending on the culture of the hotel property and the individual departments, there may be resistance or the perception that people will be losing their jobs before the work even begins. This means making sure there is buy-in at the beginning to be sure the people understand the objective and offering assurance that jobs won’t be cut, just re-designed. Although not mentioned in the text case, there is a strong culture of traditional and hierarchy in the culinary staff world, with the Executive Chef in complete control of what happens in the kitchens. Any change to this tradition represents a culture shift and potential power loss, so getting this individual’s buy-in was critical to success. The Chef does have P&L accountability, though, so demonstrating how the culture change translates to financial savings helped with Stewarding.
* Mistake #6 Risk Assessment: Some. The POI Team visits the hotel property for one week at the request of the general manager, then makes its recommendations. They hand the newly designed process to key managers for implementation, and then leave. As noted before, there is a financial incentive (P&L results) for making changes, particularly if the old process has been unprofitable. Yet the team does not force the change on the hotel property, so there is risk that it won’t be implemented.
* Mistake #7 Risk Assessment: Very little. The financial impact of process changes is reported on weekly and monthly reports, so when implementation is complete, the general manager of the hotel will be keeping a close watch. Although not mentioned in the text case, the POI Team helps the hotel general manager track results for 12-18 months after implementation to be sure the changes worked. There is also internal Starwood Intranet posting of results so other properties can see the results.
* Additional information: As a result of the POI team’s work at The Phoenician, real process change and productivity improvement has taken place. For stewards that were supporting geographically distant restaurants (half mile, one way), a golf cart was issued to drive around obstacles. Staff members were cross-trained to support different kitchen duties so they could remain productive during work hours. Labor schedules no longer revolved around a traditional 8-hour day, but instead were assigned by kitchen demand and hotel forecasts. The change resulted in a documented 23% improvement in labor productivity totaling over $350,000 in the most recent year. Over all, 28,00 labor hours were saved.
* The Executive Steward had actually wanted to make some changes in his department prior to the arrival of the POI team, and was able to use the POI team visit to leverage his desire to make those changes. From a culture perspective, students need to appreciate the difficulty in making a change to the structure and command hierarchy of the culinary department. While the Executive Chef dictated 8-hour shift coverage in all the kitchens and bakeshops, the Food & Beverage Manager actually held control over the budget for staff. The POI team had to make the case to that moving to “scheduling to demand” would not adversely affect operations in the kitchen. Instead of real-time and immediate washing of dishes, for example, carts were set up for stacking and sorting so they could easily be moved to the dishwashing area in batches. These made better use of steward time, and freed them up to work shorter shifts or cover more than one area. Once the Executive Chef was certain that the variation and flexibility in steward staffing would not adversely affect the workflow in the kitchens, he endorsed the concept. From the Stewarding Department’s perspective, there was little resistance to change since the Executive Steward was already motivated to streamline his area’s staffing and bring about a positive impact to the property’s profit and loss picture. Staff members are now rarely idle because they are deployed “just in time” for each kitchen’s activity needs.