

An Improved Long-Term Production Planning Process

Tim McIntosh - LGO 2011

Company Background

Sikorsky produces commercial and military aircraft for a diverse customer base. Igor Sikorsky founded the company in 1923. In 1942, Sikorsky Aircraft produced the first helicopter to enter mass production. More recently, Sikorsky has expanded its business, including newly opened facilities in India, Poland, and the Middle East.

- Revenues FY2009 = \$6.3 billion
- ~17,500 employees worldwide

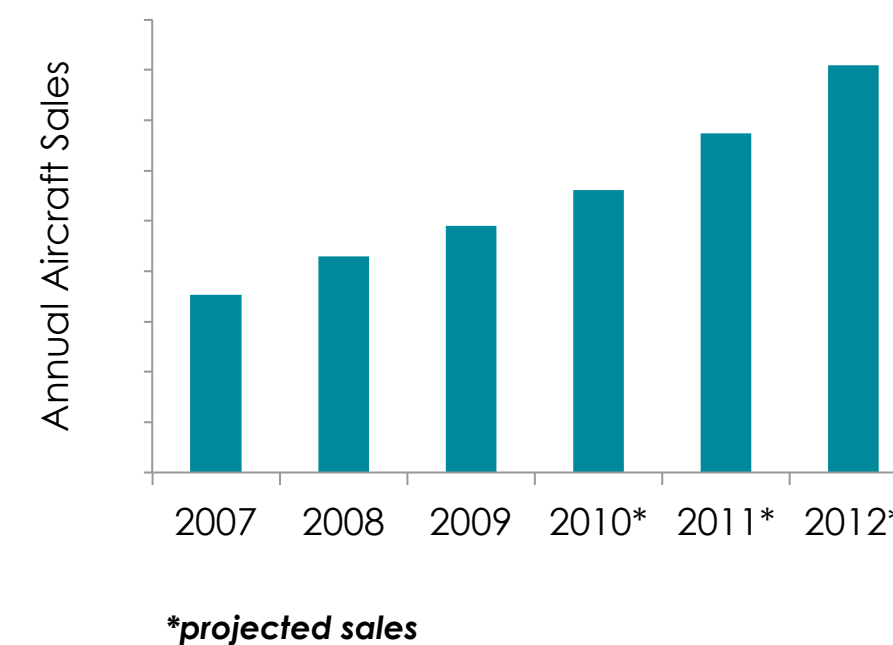
Project Background

Changing Business Conditions Create Need for Improved Production Planning

Two factors create a need for improved process quality and speed.

Factor #1 Sales Growth

Continued sales growth highlights the need for a stronger link between marketing and operations. Enterprise-wide demand must be understood in conjunction with capacity constraints. A lack of coordination may create misalignment between demand and capacity.

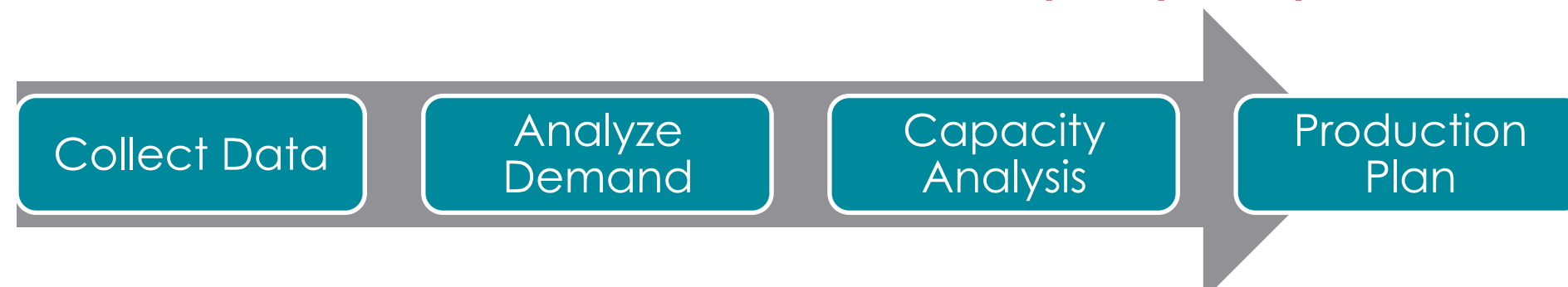


Factor #2 Volatile Business Environment

A volatile business environment drives frequent changes to the production plan. Shorter planning cycles will enable the production plan to better represent rapidly changing customer order profiles. An accurate production plan will enable sales personnel to quickly and accurately assess available capacity during contract negotiations.

Internship Objectives

Create a New Process: Faster, with Demand and Capacity Analysis



Objective #1 – Reduce Planning Cycle Time

From 2 months to 2 weeks; will allow for better response to changing demand.

Objective #2 – Create Formal Link Between Marketing and Operations

Direct link to marketing customer relationship management (CRM) data will increase customer satisfaction and profit potential

Objective #3 – Integrate Capacity Analysis Tools

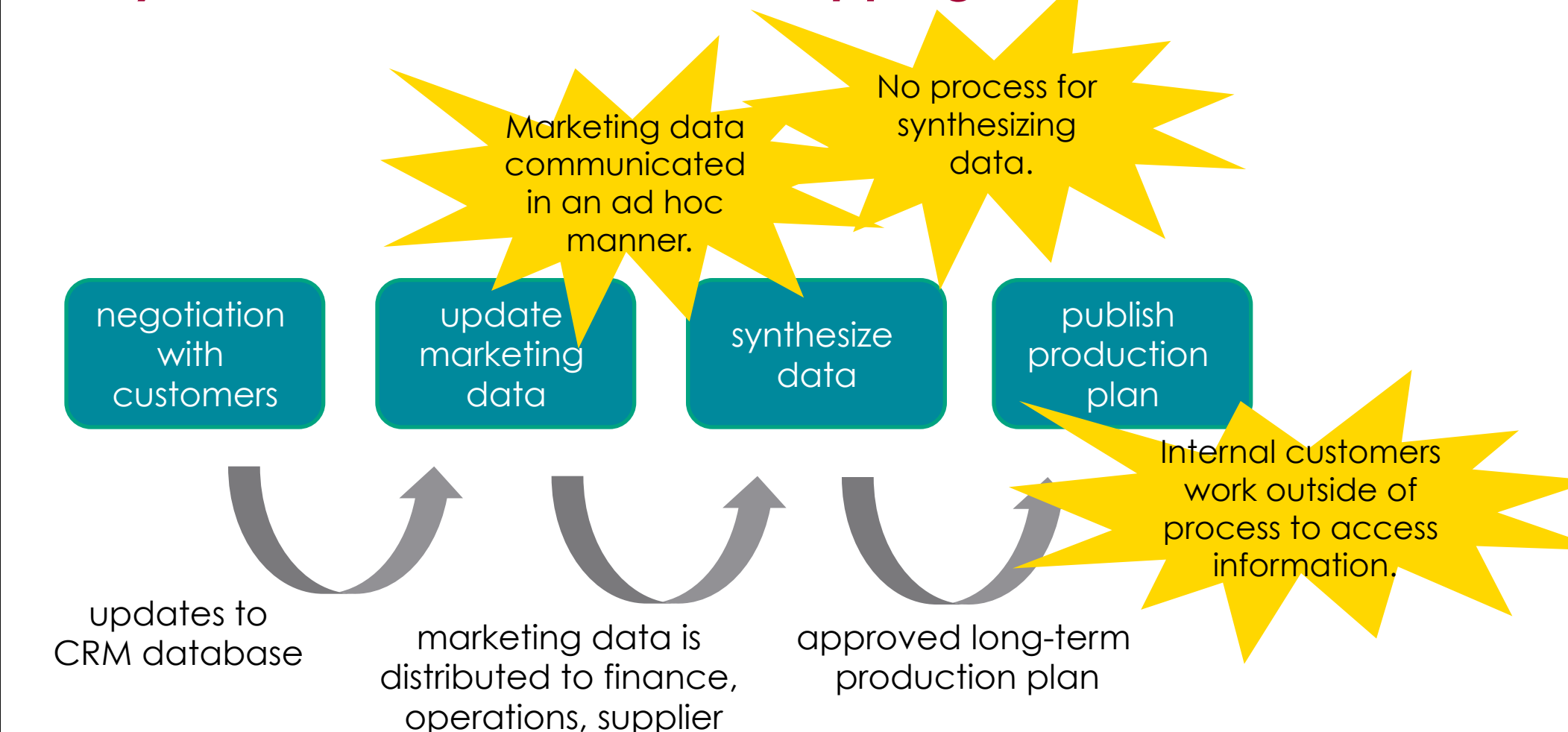
Create capacity analysis step, visual tools to prevent over-capacity condition.

Approach

Study Current State: Voice of the Customer

Qualitative interviews and quantitative surveys used to understand current process. Problem areas and internal customer needs are studied and understood.

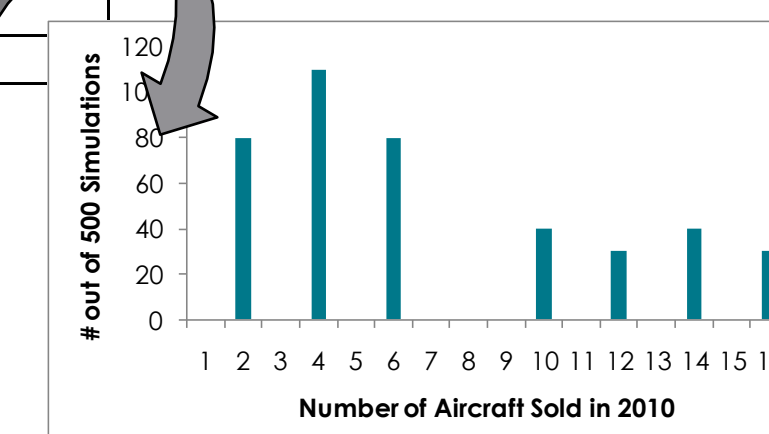
Study Current State: Process Mapping



Marketing Data Synthesis: Monte Carlo Simulation

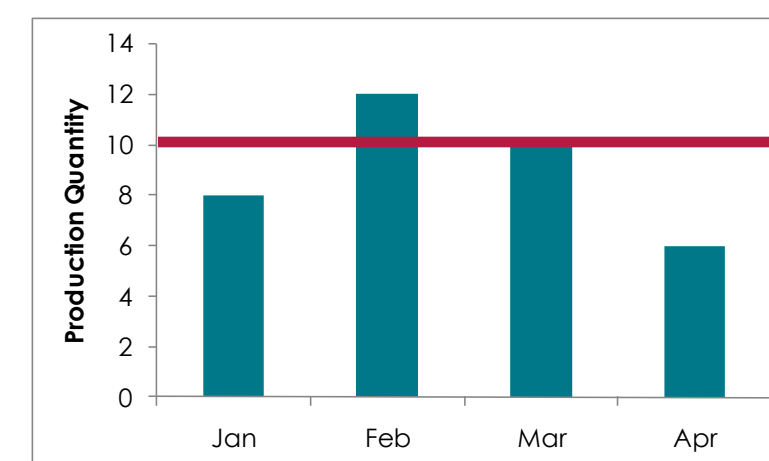
	Year	# of Aircraft	Probability of Winning Contract
Customer A	2011	4	0.50
Customer B	2011	10	0.25
Customer C	2011	2	0.40
Customer D	2011	6	0.80

Contract quantities and contract probability data are inputs; statistical summaries of demand scenarios are outputs. Run simulations for each model type; results can inform capacity allocation or additional capacity investment.



Capacity Management: Visual Tools

Easy-to-understand visual management tools can enrich long-term build plan, as well as monthly Sales and Operations Planning meetings. Capacity allocation limits are established as part of new process and represented on chart as a red limit line. Planned production of aircraft in is allowed up until limit line, after which formal request must be made and capacity is re-allocated, pending approval.



Approach (cont.)

Standard Work Definition

Standard work forms will be created for the new process. A cadence will be developed and communicated such that process time is understood by the enterprise. Standard forms will govern information hand-offs among groups. The entire process, along with the roster of participants, will be documented and distributed to all stakeholders.

Next Steps/Challenges

Next Steps:

1. Continue process development with input from stakeholders
2. Define standard work instructions
3. Train and mentor process users

Challenge

Create a process that meets the needs of ALL stakeholders.



Acknowledgements

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