Gaining an edge

Fueling share and sustaining advantage: New challenges for the airline industry

Introduction

Today, airlines are working hard to restore the public's confidence in air travel. Helping to ensure the safety of passengers has become an overriding issue—one that most agree should be left in the hands of law enforcement officials. From now on, carriers and their passengers will be required to comply with stricter security measures that place safety before convenience. As these changes ripple through the industry and all carriers start to implement similar security processes, competitive differentiation will once again be driven by competencies that deliver sustained value and improve market share.

IBM recently completed a seven-month study to ascertain how the implementation of technology affects the market value of airline carriers. Conducted from November 2000 through July 2001, the study comprised primary research involving 20 global carriers; secondary research entailed reviewing data for all global carriers. IBM then analyzed the equity market of the major U.S.-based based airlines based on price-to-sales ratio.

The study led to two related conclusions:

- Deregulation increases the need for operational efficiency among all global airlines.
- However, fundamental efficiency strategies duplicated by competitive carriers will not lead to an increase in stock price, and will only serve to decrease the overall profitability of the industry.

e business

Achieving competitive differentiation

Our analysis revealed that sustainable differentiation comes from carefully managing four strategic levers:

- *Customer management*—Enhancing the portfolio of current and potential customers
- *Employee management*—Sponsoring initiatives to adequately train, track and motivate highly skilled employees who are integral to superior customer management
- *Operations management*—Optimally leveraging the high-value capital assets of airplanes and airport gates
- *Information technology management (IT)*—Using IT as a tool to support overall business strategy and tactics. Superior technology integration across an organization enables efficient and effective management of customers, employees and operations. The advent of the Internet makes integration more affordable.

Let's explore each of these items in more detail.

Customer management

In terms of an airline's long-term viability, IBM research found a strong correlation between customer satisfaction and market perception. As we compared the price-to-sales ratio for U.S.-based airlines to the airline quality ratings from the U.S. Department of Transportation, a trend emerged: Airlines who had higher service-quality ratings consistently presented more attractive market valuations, as represented by the price-to-sales ratio.

Customer service versus market valuation—U.S.*

AQR[1] score versus 2000 price-to-sales ratio

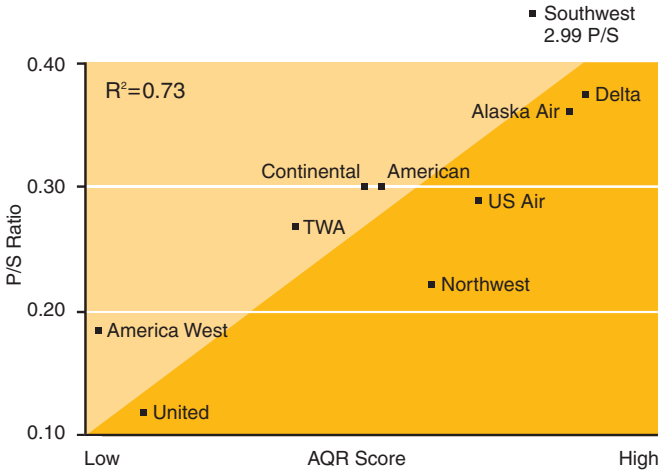

Figure 1.
*Note: R2 is calculated without Southwest Airlines to avoid skewing of data. Source: [1]Airline Quality Rating 01 (includes 2000 data); [2]American Customer Survey Index Q1 00; [3]US DOT, Final Report on Airline Customer Service Feb 01; quicken.com 01. *Price-to-sales ratio as of April 2001. Recent events have caused these p/s ratios to change. R2 is the correlation coeffecient, it quantifies the correlation between two variables. R2=1 represents a perfect correlation, R2=0 signifies total randomness.*

Additional analysis of airlines' best practices in implementing CRM strategies identified three different types of initiatives that drive customer satisfaction:

- *Empower*—Offer customers options by furnishing real-time information at each stage of the journey.
- *De-stress*—Decrease the stress of traveling by making the airport experience as convenient as possible, while balancing issues of security.
- *Delight*—Provide amenities to make the customer's trip more enjoyable.

Figure 2 highlights some of the potential activities to support these initiatives.

Empower	De-stress	Delight
• Online booking services - Intelligent agent - Travel agent content - Customizable home pages • Web incentives • Booking partner services - Book on partner airlines - Bundled services • Corporate extranet • CRM-based "push" marketing and yield management • Pre-flight information services - Airport high graphic informational screens - Flight/trip-related updates and notifications (pre- and during flight) • In-flight surveys	• RFID (radio frequency identification) baggage tags • Check-in services* - Smart card check-in • Transportation services - Transportation to connections - Transport to/from car/hotel/meeting • Baggage services - Prioritized baggage unloading - Bags delivered to the customer * *These services in particular should provide a balance between convenience and security. Previously envisioned services may combine security-based technology with improved traveler services.*	• CRM in-flight - Pre-profiled in-flight services - PDAs for attendants with personalized passenger preferences - Realtime in-flight journey information • CRM pre/post flight - Ongoing customer service - Ongoing service with partners • In-flight Internet/entertainment - High-speed Internet - In-flight digital entertainment • Pre/post flight Internet access - Wired executive lounges - Wired terminals

Figure 2.

Perhaps most critical to airline management, IBM research allows us to quantify the benefits of each initiative in terms of a change in operating margin. As seen in Figure 3, these initiatives can bring a cumulative potential benefit of nearly five percent in airline operating margins. Improvement categories are ranked in terms of the all-important factor of *sustainability*. While customer empowerment brings the greatest gains in margins, delighting passengers translates into the most sustainable advantage. Still, the best way to view these "best practices" is in terms of their combined impact on increasing margins and creating a lasting competitive edge.

Average airline estimated operating margin improvement*

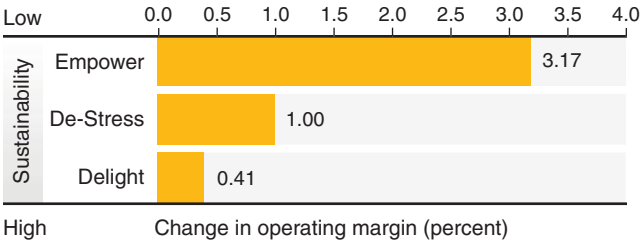

Figure 3.
**Operating margin improvements are impacted by dynamic competitive and market conditions, so results may vary.*

Employee management

Employee management is a key area of airline differentiation because:

- Airline operations are labor-intensive.
- A high level of training and specialization is required to promote safety.
- There is a significant interaction between employees and customer touch points.

Our analysis demonstrates a correlation between strong labor relations and sustainable business advantages. A case in point is Continental Airlines. The company's strong labor relations have been a key differentiator during the current economic downturn, and (compared to the competition) a contributor to superior business results in the second quarter of 2001.

Companywide attrition rates - 1998

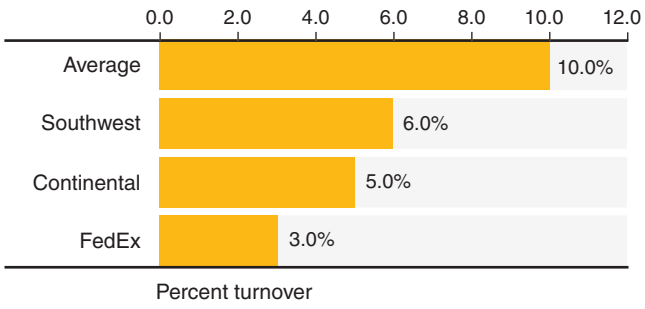

Figure 4.

Earnings growth

Last five years

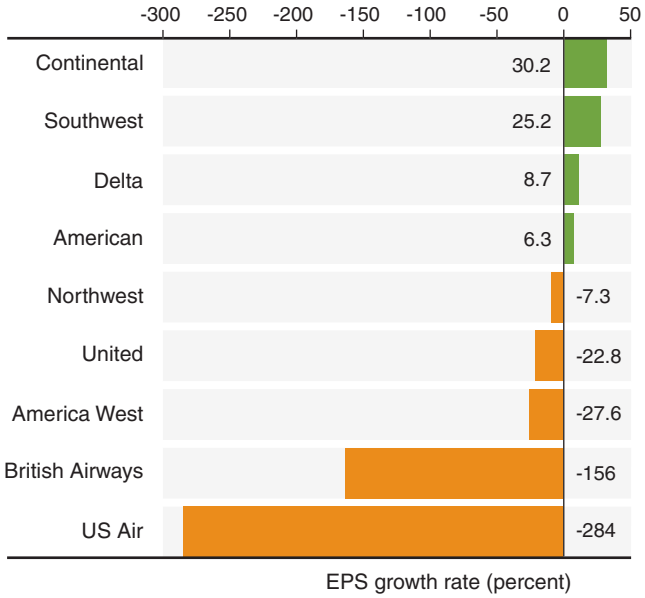

Figure 5.

Technology-driven initiatives for improving employee management work best if companies follow some simple guidelines:

- *Include employees*—Provide information in a way that enables employees to understand and execute on the company's strategy and self-manage their jobs. For example:
  - Inform employees of current cross-company and cross-industry developments.
  - Develop closed-loop mechanisms that allow employees to find answers to questions.
  - Provide HR information that help employees better manage their work lives.
- *Enable employees*—Once employees fully understand your strategy, provide tools and technologies that help them surpass expectations. For example:
  - Look for lower-cost training tools that are highly effective.
  - Install on-the-job performance-measuring tools to identify training needs on an ongoing basis.
  - Encourage employees to solve problems, reduce inefficiencies and share newfound best practices with the entire enterprise.

- *Reward employees*—Recognize employees' hard work and ingenuity with appropriate incentives, for example:
  - Develop compensatory incentives that align with company strategies.
  - Measure and reward employees based on their productivity—not just their seniority.

For some areas of the airline business—and for some groups of employees—these initiatives are more difficult to achieve due to collective bargaining rules. Nonetheless, in the airline carriers IBM studied, we found examples of best practices in implementing these types of rewards.

Figure 6 below summarizes our analysis of the impact that enhancing labor productivity has on operating margins. Each of the categories is supported by multiple technology initiatives. The initiatives range from simple to complex as one moves from Include to Reward.

Average airline estimated operating margin improvement*

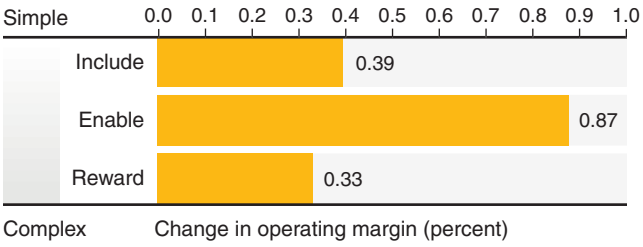

Figure 6.
**Operating margin improvements are impacted by dynamic competitive and market conditions, so results may vary.*

Operations management

Operations management, which tends to absorb the most capital, does not deliver sustainable advantage. In fact, focusing on this function has resulted in industrywide margin pressures. It is thus important to recognize that successes like Southwest Airlines (measured by its superior P/E [price/earning] ratio), WestJet (Canada) and Ryan Air (UK) should be emulated only if low cost is the carrier's primary value proposition.

IBM believes that to remain viable in a given market, companies must attain a minimum level of efficiency. At the same time, continued profitability can best be achieved by implementing strategies that create differentiated value. The lesson to be learned from airline deregulation is that competing primarily on price alone is simply not enough.

In addition to the points discussed earlier, there are two other strategies airlines can apply to achieve operating excellence:

- *Streamline maintenance and engineering operations* by leveraging new technologies in procurement management and pooling inventories with alliance partners.
- *Enhance day of operations recovery capabilities*—Most carriers have made considerable investments in planning for the unexpected; however, today's complex airline routes invariably lead to frequent unplanned disruptions. While the majority of airlines use experience-based manual methods to recover from these situations, this is an inefficient process that works only for small carriers with simple route networks.

Figure 7 describes our operating margin quantification of key initiatives supporting operational efficiency.

Average airline estimated operating margin improvement*

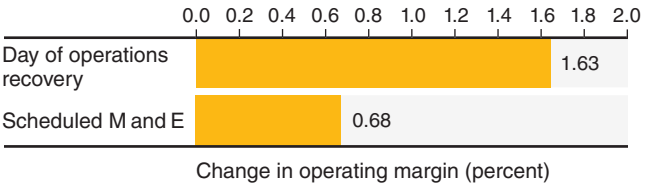

Figure 7.

**Operating margin improvements are impacted by dynamic competitive and market conditions, so results may vary. Savings estimates are direct savings only and do not include lost revenue due to passenger ill will.*

The role of information technology

As IBM analyzed the technology components of customer, employee and operations-management initiatives for airlines, we discovered a correlation between the business value of these efforts and the integration required to achieve desired results. This finding led us to conclude that the level of technology integration is itself a competitive differentiator.

Figure eight demonstrates how enhanced value (return on technology investments) can be achieved when successive and increasingly sophisticated applications are employed to leverage previously implemented market-entry solutions. These results can only be attained through IT-driven organizational integration. Airlines that focus on implementing "easy" solutions are constantly achieving industry parity—without gaining the all-important quality of differentiation.

Return on technology investments

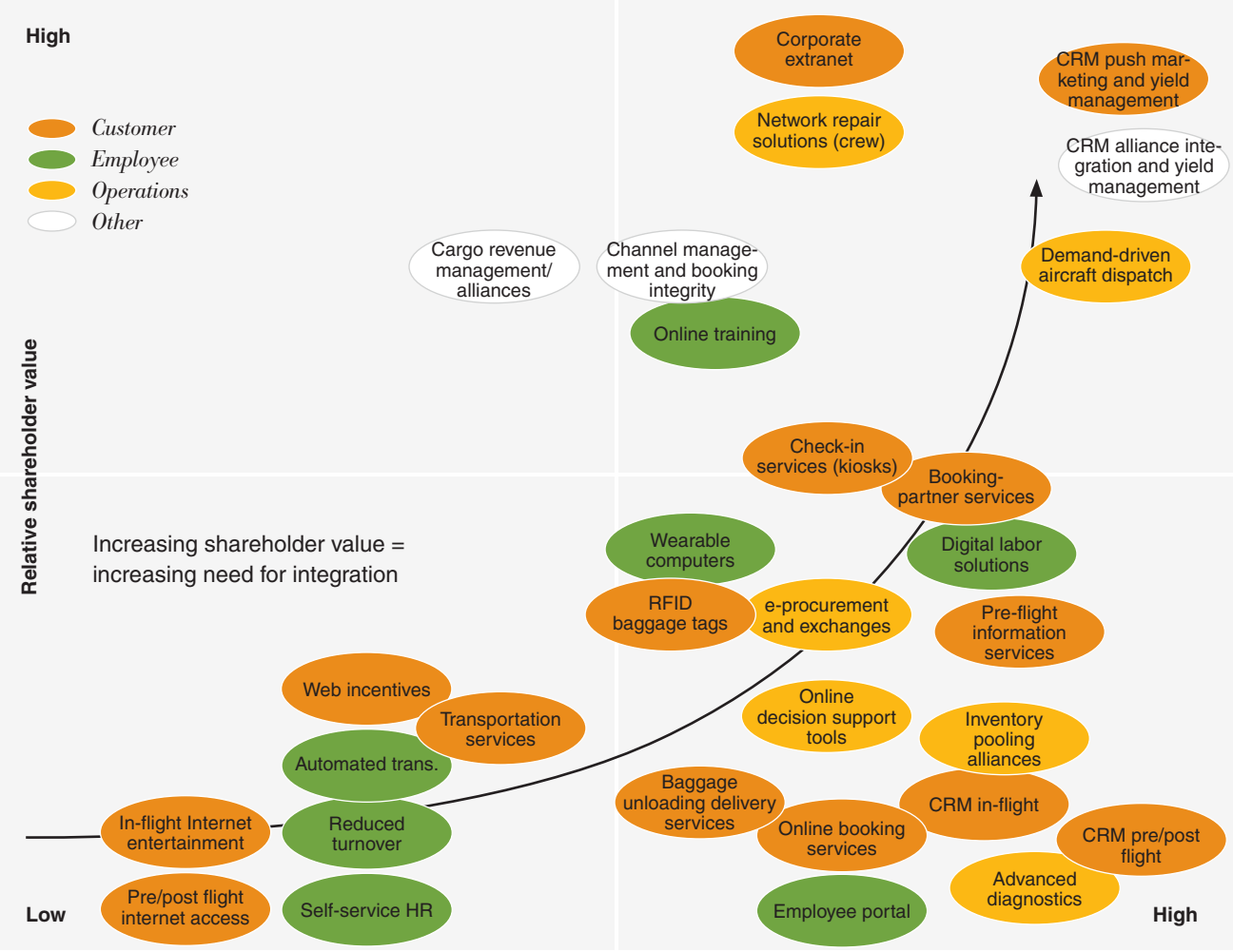

Figure 8.

IT plays a variety of roles in the airline industry. The key types of relevant technologies currently used include:

- Core applications and technologies (human resources, reservations, departure control and revenue accounting, for example) maintain operations but do not provide competitive differentiation.
- Competitive applications and technologies (such as ERP, Customer Relationship Management and Yield Management) represent mature technologies that can provide considerable business benefits to an airline. These are the "crown jewels" of a company, and form the basis of superior business results. However, these applications depend on exceptional execution.
- Emerging technologies provide market-leading business benefits by taking advantage of evolving applications. These applications are subject to experimentation to determine their appropriateness prior to committing considerable financial resources on their behalf.

Advances in technology tend to have a ripple effect; today's emerging applications develop into tomorrow's differentiators, which, over time, become core applications. The key is to gain a sustainable advantage from this technology continuum—enabling each new investment to apply to and reinforce previous implementations.

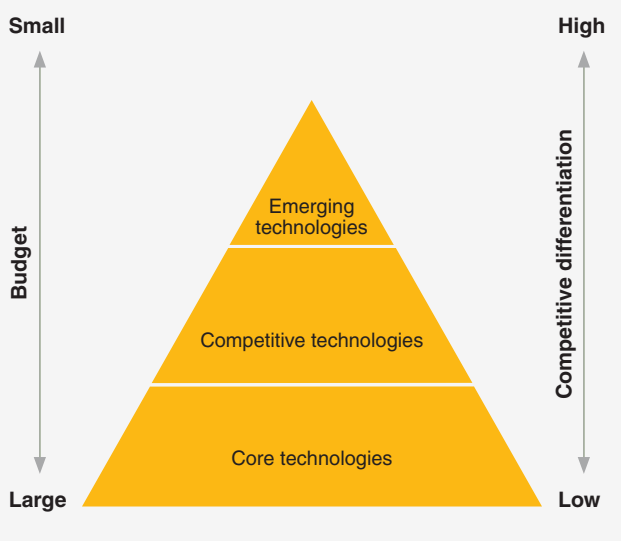

Figure 9.
Source: MIT Center for Technology Research[1]

As you evaluate your technology goals across these three dimensions, you can use the following strategies to help enhance your success:

- *Core applications*—Aim for reliability and economies of scale to maintain the most cost-effective capability (data center and basic application management, for example).
- *Competitive applications*—Use customization, integration and reliability as standards for achieving optimum effectiveness (CRM applications for core customers and ERP for operations management, for example).
- *Emerging applications*—Focus on speed of deployment and integration to deliver tangible business results (wireless solutions for customers and gate agents; automated day of operations recovery, to name two).

Where to begin?

Airline executives should start by developing a plan for raising the bar on performance and, in turn, increasing profitability, price/earning ratios and stock price. In pursuit of this goal, it is important to think through each strategic area outlined below and take appropriate steps:

- *Customer management*—Define customer expectations and make sure you deliver on them. Beware of experimental technologies that do not integrate with competitive and core applications. These "market excitement" implementations are easily duplicated, and typically do not drive competitive advantage.
- *Employee management*—Identify what you must do to incorporate employee relations into strategy and to develop applications that will help drive market differentiation by leveraging labor's customer touch points.
- *Operational management*—Define the lowest level of operational excellence that will help you sustain your market strategy. Avoid market share battles in markets that reduce industry pricing power. Explore the steps you must take to combine operational excellence with other strategic initiatives.
- *Information technology*—Take an inventory of all technology applications (core, competitive and emerging) and test how they align with your market strategies. Analyze the functional and technical quality of the application

portfolio. (Functional quality is a measure of how well the application performs with respect to what users need and expect, and its ability to deliver superior value; technical quality is a measure of how much effort is involved in developing and maintaining the required functionality).

- *Execution*—Fund investments to close deficiency gaps in strategic applications. Some of these gaps may require additional infrastructure investments. Leverage Internet standards to enable these efforts at a reasonable cost. If required, turn to an external execution partner for help.

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This report was developed by IBM Global Services' Airline Consulting Group. This same group also conducted the study referenced here. Special thanks to Declan Boland, Kevin McCurry, Kris Murthy, Chris Sargeant, Maureen Stancik, and Ming Tsai. This team possesses a broad range of skills including: strategy consulting, airline industry expertise and e-business consulting. For additional information contact *kmurthy@us.ibm.com*.

[1] Ross, Jeanne W., Vitale, Michael R., and Weill, Peter. From Place to Space: Migrating to Profitable Electronic Commerce Business Models, *MIT Center for Information Systems Research*, Working Paper #324, 2001.

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