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Teaching Note

INTELLIGENT AVIONICS: BREAKING INTO THE INFLIGHT ENTERTAINMENT INDUSTRY

Rob Britton, Robert Mackalski, and Mary Dellar wrote this teaching note as an aid to instructors in the classroom use of the case Intelligent Avionics: Breaking into the Inflight Entertainment Industry, No. 9B18A067. This teaching note should not be used in any way that would prejudice the future use of the case.

SYNOPSIS

Intelligent Avionics Ltd. (IA) was an entrepreneurial company that was launching three inflight entertainment (IFE) systems under the brand name AURA. Rob Britton, IA's vice-president of marketing, was concerned about IA's technical problems and organizational structure, but he needed to help set the struggling company's target market and new product priorities.

LEARNING OBJECTIVES

Students must evaluate the challenges of developing new products with a globally dispersed team (GDT). They are also asked to recommend how this company should move forward with the development of three product lines simultaneously. After working through this case, students should be able to do the following:

- Evaluate the advantages and challenges of managing new product development with a GDT.
- Better identify and select a target market for an entrepreneurial company.
- Consider the pressure of time to market with respect to new products and the distinct issues of competing with entrenched incumbents.

POSITION IN COURSE

This case is suitable for MBA and undergraduate courses in strategic marketing planning, new product development, services marketing, and entrepreneurship.

RELEVANT READINGS

- Robert G. Cooper and Scott J. Edgett, "Maximizing Productivity in Product Innovation," *Research Technology Management* 51, no. 2 (2008): 47–58.

- Thomas R. Eisenmann, Eric Ries, and Sarah Dillard, "Hypothesis-Driven Entrepreneurship: The Lean Startup," *Harvard Business Review*, December 13, 2011, 1–26. Available from Ivey Publishing, product no. 812095.
- Salim Ismail, Michael S. Malone, and Yuri van Geest, *Exponential Organizations: Why New Organizations Are Ten Times Better, Faster, and Cheaper Than Yours (And What to Do about It*) (New York, NY: Diversion Books, 2014).
- Edward F. McDonough III, Kenneth B. Kahn, and Gloria Barczak, "An Investigation of the Use of Global, Virtual, and Colocated New Product Development Teams," *Journal of Product Innovation Management*, 18, no. 2 (March 2001): 110–120.
- Stefan Tongur and Mats Engwall, "The Business Model Dilemma of Technology Shifts," *Technovation* 34, no. 9 (2014): 523–535.

RELEVANT VIDEOS

- "The Evolution of Inflight Entertainment," YouTube video, 1:28, posted by "aurainflight," April 26, 2011, https://youtu.be/-16l8AU__VU.
- "In-Flight Entertainment Gets High-Tech," YouTube video, 3:14, posted by the *New York Times*, December 19, 2014, https://youtu.be/3X1A_c89egQ.

ASSIGNMENT QUESTIONS

1. Describe AURA's product line. Should the small development team work on all three products simultaneously? Would you dedicate equivalent resources to all three?
2. How does IA's GDT affect the company?
3. Why did IA rush to exhibit its prototype in Hamburg, Germany? Was this a good choice?
4. Who should IA target?
5. What is the future of IFE?

TEACHING PLAN

This following is a suggested time-frame for an 80-minute class.

Discussion Point	Time (Minutes)
Introduction	5
Assignment Question 1	15
Assignment Question 2	15
Assignment Question 3	15
Assignment Question 4	15
Assignment Question 5	10
Conclusion	5

ANALYSIS

1. Describe AURA's product line. Should the small development team work on all three products simultaneously? Would you dedicate equivalent resources to all three?

IA developed a product line to address the lack of real technological advancement in the IFE industry. AURA effectively abolished the need for heavy servers on board aircraft and eliminated the risk of server failure. Attributes of AURA's trio of solutions can best be understood by observing the chart below.

AURA Works	AURA One	AURA Connected
Seatback touchscreen device linked to onboard content	Low-cost means of delivering digital content for older systems with overhead screens	Wireless streaming via onboard intranet
Several screen sizes and mounting options	Capable of being installed overnight	Addresses issue of high fuel costs due to weight of existing systems
Manufactured with readily available PC components and Microsoft Windows 7 operating system	Improved video and sound quality compared to existing systems	Leverages rising ubiquity of connected devices like tablets and smart phones
	Target small and mid-size airlines with modest budgets	Greatly reduced fuel and maintenance expenses
Target price 30–50 per cent below incumbents'	Ease of upgrading to AURA Works or AURA Connected	
Potential for greater reliability (passengers would never face a dark screen) and flexibility		
Potential for cost savings		

At the outset, AURA Works was to be the launch product. However, during the development phase, the company decided to broaden the product line. This was a reaction to early sales calls, industry trends, and the rapid pace of technological advancement. The team continued to develop AURA Works but added AURA One and AURA Connected in reaction to the link between the technology push and the market pull that they believed was happening.

The trio of AURA solutions in response to perceived customer need resulted in additional strain on the already taxed four- to ten-person development team. The decision to build the entry-level AURA One, although deemed a needed market response, may have lengthened the development time and contributed to the company drifting further and further from the initial target. Developing the wireless AURA Connected variant exacerbated these strains. However, the students may also argue that IA was listening to the voice of the customer.

2. How does IA's GDT affect the company?

Globally dispersed teams are increasingly prominent in many industries. Product complexity and pressure to secure appropriate expertise often result in companies building virtual teams. Some argue that employment theory of the twentieth century—that is, that "the best way to harness human talent is through full time, exclusive relationships where people are paid for the amount of time they spend at a common location"—is fundamentally out of date. According to Ismail, Malone, and van Geest, to create an innovative or disruptive company, staff on demand is a necessary characteristic for expertise, speed, functionality, and flexibility in a fast-changing world.[1]

Students can be asked how well IA fits this new mould. IA's core team consists of fewer than 10 individuals residing in five different countries. Many new product development team members, like IA's, operate on a part-time basis. Often, time spent on a project is dependent on how many other projects the member is working on at any given time.

The organizational structure is of concern to Britton because he perceives "substantial tensions within the company" that may be affecting the efficacy of the efforts and ongoing commitment of the individual team members. Further, power conflicts among some of the IA staff have gone unresolved because the team rarely meets. GDTs may have cultural and communication barriers as well.

There is also a potential downside to the part-time model. Team members may get frustrated due to perceived lack of (a) effort, (b) commitment to timelines, and/or (c) loyalty to the success of the project.

To wrap up this discussion, students can be asked how IA might alleviate these problems. IA could benefit from some regularly scheduled traditional team meetings. Clear job descriptions, timetables, and scorecards could also help alleviate the aforementioned issues. Research in the United States and the Netherlands has found that virtual and traditional communication channels can strengthen and complement each other and enhance knowledge transfer.[2] Obviously, there are costs associated with face to face meetings, which may tax an entrepreneurial firm, but the benefits may be worthwhile.

3. Why did IA rush to exhibit its prototype in Hamburg, Germany? Was this a good choice?

Time to market is the length of time from product conception to reaching the market. It is particularly of concern when there is a risk that a product will become outdated quickly, as is often the case for innovative products. Furthermore, the continuous reduction in product life cycle time and increase in competition due to globalization places additional pressure on the economic impact of being late to market. There often has to be a trade-off among speed to market, costs, and quality.

IA may have been concerned about the potential for technology shifts to affect the launch of their product lines. Tongur and Engwall noted that potential technology shifts are challenging, even to established companies, and can result in a business-model dilemma for even leaders in an industry.[3]

Having their product ready for the Hamburg trade show was believed to be of significant value to Britton; he did not want to miss an opportunity to cram "a year of sales effort…into just a few days." However, the

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[1] Salim Ismail, Michael S. Malone, and Yuri van Geest, Exponential Organizations: Why New Organizations Are Ten Times Better, Faster, and Cheaper Than Yours (And What to Do about It) (New York, NY: Diversion Books, 2014), 58.
[2] Michael Song, Hans Berebds, Hans van der Bij, and Mathieu Weggeman, "The Effect of IT and Co-Location on Knowledge Dissemination," *Journal of Product Management* 24, no. 1 (January 2007): 52–68.
[3] Stefan Tongur and Mats Engwall, "The Business Model Dilemma of Technology Shifts," *Technovation* 34, no. 9 (2014): 523–535.

need for speed could ultimately harm IA. Greve and Seidel argue that "the goal should be to get to market as quickly as possible with a product that customers will keep."[4] However, there is a danger that a product that is deemed inferior after adoption and subsequently abandoned by those early customers will eradicate the sought-after first mover advantage.

4. Who should IA target?

Some students will argue that the larger the airline, the greater the benefit from IA's offerings:

- AURA Works provides weight savings, system reliability, and greater volume of content. The weight savings is likely the biggest draw because this has a direct impact on the bottom line—especially with concerns about rising fuel prices. (Weight reduction could be as much as 1,000 kilograms per plane.) In this context, the largest airlines, like United Airlines, Inc., and Delta Air Lines, Inc. (see case Exhibit 3), would be the biggest beneficiaries of AURA Works.
- AURA One's main value proposition is better inflight content, performance, and reliability. The benefits to the airline here are more indirect. From the airline perspective, cabin crews get blamed if things go wrong on a flight. Happier passengers, happier crew. From this perspective, the largest airlines would see the greatest benefits.
- AURA Connected is the most future-oriented solution but would require potential customers to take a quantum leap by assuming that nearly every one of their passengers would have a Wi-Fi device.

Other students may argue that it would make sense to target airline competitors like JetBlue Airways Corporation or Asiana Airlines, Inc., which seek to compete in part with superior service. Airlines that compete on superior service (rather than cost-cutting) may find IA's proposition of improved IFE, content, and passenger enjoyment compelling.

Business jets are a tougher sell. Executives flying these jets are often working during flight, and many jets are built for short distances. That being said, a high-end AURA Connected could be a fit for larger business aircraft.

Students should be led to see that there is a more urgent issue for IA. The company is a lean entrepreneurial start-up with limited sales resources and no sales. IA needs to demonstrate revenues and prove it can be a credible player in the space. As such, it must close a sale and launch a customer as quickly as possible. Given its size (and the nature of competition, as described), IA does not have the luxury of time. Britton's team cannot risk having a competitor produce a more innovative offering during IA's launch period.

<u>Linefitting or Retrofitting</u>

Students can be asked, "Where is the sales cycle shortest—linefitting (pitching new planes) or retrofitting?" Retrofitting should be the shortest because it will require fewer approvals. Installing IFE on new planes requires the approval of the manufacturer (e.g., the Boeing Company), airline (e.g., Delta Airlines, Inc.), and government safety regulators (principally the Federal Aviation Administration of the United States and the European Aviation Safety Agency). As a further complication, these safety regulations may vary by geography. In other words, bureaucracy will lengthen the sales process, and more stakeholders would be ready to "kill" the IA option. With retrofitting, once the plane is delivered to the airline, the Boeing

[4] Henrich R. Greve and Marc-David L. Seidel, "Being Early Beats Being Better," *Harvard Business Review*, June 2014, 3. Available from Ivey Publishing, product no. F1406D.

Company or Airbus SE step away from subsequent modifications. In addition, all of the plane's electrical systems are already proven, which should shorten regulatory bottlenecks.

Airlines to Target

IA needs to talk to mid-size airlines (fleet size of, say, 20–65) that operate medium- to longer-haul flights. In an ideal world, IA could call on an airline, have a meeting with a chief executive officer and one or two senior officials (the likely decision makers), and secure quick approval. These companies would likely be eager to be part of public relations and publicity. In addition, if IA approaches a growing company (more likely in a growing market like Turkey or Asia), IA can grow with the company.

This approach would reduce the labour required to comply with larger carriers' cumbersome selection and procurement processes, and it would bypass the often tight relationships between Panasonic Corporation and Thales Group and the big airlines. Further, installations could be done faster.

Focusing and winning in a small market (a beachhead), would help to establish IA as a viable alternative; a single launch customer is critical.

5. What is the future of IFE?

To start the wrap-up, the instructor can show "The Evolution of Inflight Entertainment" video, followed by the *New York Times* video, "In-Flight Entertainment Gets High-Tech." Students ought to realize how quickly this industry is evolving because of technology. It also seems that no-frills carriers are less inclined to offer IFE, while the premium airlines are looking for bells and whistles. But once IFE has a library of movies, in-seat ordering, music on demand, and gaming—what is next? Students may argue that immersive two-dimensional, three-dimensional, and 180-degree films and virtual reality options will be the next generation. Indeed, some companies (e.g., SkyLights) are beginning to offer these services to airlines but with limited success.

WHAT HAPPENED

A few months after IA's failures at the 2012 Aircraft Interiors Expo in Hamburg, Clark Stevens filed for administration, the U.K. equivalent of bankruptcy liquidation. Later that year, Stevens and Connor Martin used the intellectual property developed for the AURA Connected wireless system and formed AeroFi, further developing and marketing what they regarded as the only marketable product.

AeroFi achieved some success, initially with the U.K.'s Monarch Airlines (now defunct), and the company was then sold the company to Media inMotion. In 2016, LSG Sky Chefs, part of Germany's Deutsche Lufthansa GE, acquired Media inMotion. According to an LSG news release, "Media inMotion's portfolio includes hardware and software solutions for Inflight Retailment Systems, which offer much more variety and choice than traditional Inflight Entertainment Systems. These systems also integrate onboard shopping capabilities, thus providing an additional sales channel to passengers, as well as broadening the range of products and services offered for sale onboard."[5]

[5] LSG Group, "LSG Sky Chefs Concludes Acquisition of Retail inMotion and Media inMotion," press release, November 27, 2015, accessed November 11, 2018, www.lsgskychefs.com/media/news/lsg-sky-chefs-concludes-acquisition-of-retail-inmotion-and-media-inmotion.