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**Auto-Graphics Corp and the Library Automation Industry**

**Case Synopsis**

The Auto-Graphics, Inc. (“A-G”) case is an example of a small business that has survived over three generations through adapting to industry and market trends, yet still faces challenges as technology continues inexorably to change the business environment. A-G competed in the public, academic, and consortia (PAC) segment of the library-automation industry. It was founded in 1950 in Alhambra, California by Ira C. Cope and in 2011 was led by his grandson, Paul Cope.

The case opens with Paul Cope’s excitement and optimism about the future possibilities of the library-automation industry. His optimism was somewhat tempered by the fact that the library market was very mature and libraries in both Canada and the U.S. were confronted with shrinking budgets. Although Paul Cope was hopeful about the future possibilities of the library-automation industry, A-G had to find a way to increase revenues in its North American business in the face of declining library budgets.

The case describes the library-automation industry, the market segments served, the products offered by the firms in the industry, the trends affecting the industry, and the challenges faced by the incumbents in the industry. It then describes competition in the PAC segment, which was intense throughout the 2000s. Competing technologies included SaaS (Software as a Service), which many competitors including A-G offered, and open-systems software, offered principally by LibLime and more recently by ByWater Solutions and Equinox Software.

Markets were also changing. One ongoing issue was that library patrons belonged to a generation accustomed to Google-like search engines and the latest and greatest technologies, so held high expectations for a library’s ease of use and breadth of content. Libraries needed to make radical changes to redefine their relevancy with their community of users and to keep up with changes in technologies including eBooks, eJournals and other online resources. A trend across all categories was a fundamental shift from individual libraries/schools and PC-based systems to consortia and centralized, district-wide, web-based systems to help increase efficiency and give access to a larger collection of materials. Public entities were also constrained by a dependence on state budgets and private grants and donations, particularly during the 2008 recession and its aftermath.

The case then describes A-G itself—how it innovates, its product line, and its financial statements over the past five years. The case ends with the challenges facing Paul Cope and A-G. The case will challenge students to integrate industry and competitive dynamics with market demands and technological trends and devise a set of worthy strategic alternatives commensurate with its financial resources to help A-G continue to grow in the future.

**Research Methods**

The case has benefited from two in-depth interviews with Paul Cope, and an interview and multiple phone and email conversations with Albert Flores, A-G’s Vice President of Sales. Excerpts from these interviews give a good account of what it’s like managing a small company trying to maintain a technological edge and compete with larger competitors. We also interviewed an academic librarian to provide some perspective on changes faced by libraries and the future role of the library. The case authors are academic researchers with the desire to produce high-quality cases of firms in Southern California where A-G is located. They have no associations with A-G or with the library-automation industry. The data in the case come from primary research conducted with two A-G informants, a librarian, and from secondary data sources cited in the case.

**Appropriate Courses**

We have used the case in both graduate and undergraduate Strategic Management courses. Since A-G is a relatively small business, the case could also be used in small-business management and entrepreneurship courses. However, in this note we focus primarily on its use in a business-strategy course. The case will work well at any point in the course. It can be used at the beginning of the course to introduce students to the tools of strategic analysis; it can be used in the middle of the course to drill students in use of the tools of strategy analysis (where we typically use it); or it can be placed at the end of the course to give students the opportunity to apply what they have learned to identify a set of worthy strategic alternatives for A-G and choose one they might recommend.

**Goals and Objectives**

1. Describe the library-automation industry and identify the major economic and technological influences that impact the industry. This is a particularly important objective as students use the products of firms in the library-automation industry on a daily basis, but are not familiar with this industry or with the firms that compete in it. While there is utility in having students analyze cases about popular industries, we believe it is just as important to broaden students’ breadth of knowledge of the variety of industries in the U.S. economy. To this end, we believe this case has great utility. Our experience demonstrates that students enjoy the case for the very reason that they learned about an industry of which they were previously unaware, but with which they interacted daily.
2. Conduct a comprehensive financial analysis of a firm and use the results in strategic decision-making.
3. Apply and use the tools of strategy analysis to formulate an effective strategy for A-G that would address the strategic issues faced by the firm.[[1]](#footnote-1)

**Pedagogy**

There are four main approaches for teaching the case. Regardless of the approach followed, we suggest students be encouraged (or required) to conduct a thorough financial analysis.

Lead the case for the students using the major analysis headings presented in this note. For each topic, ask the question and strive to get students to participate and discuss the issues. If this case is placed at the beginning of the course, the students may need more ‘leading’ or prompting to get them going.

Divide the class into groups and assign different analysis topics to the different groups. Depending on the length of the class session, give them a reasonable amount of time to do the analysis and then have a spokesperson from the group report to the class as a whole, using the white board as appropriate. Get the class to receive these analyses critically, which is also your role in the process.

At the start of the course, assign different groups in the class the opportunity to do a strategic analysis of different entire cases (if the class has six groups, assign a different case to each group). The group then does a PowerPoint presentation to the class for its case, incorporating the various analyses involved, coming up with viable strategic alternatives, and making its recommendations as persuasive as possible. Afterwards, the same group stays standing and fields questions both from the class (mainly) and the professor. The professor could use the rest of the class time in exploring aspects of the case that warrant further discussion.

With a course design that calls for class sessions of 3-1/2 hours once a week—and we have used this approach in our MBA classes, which fits this scheduling—one group leads the case discussion (other groups then lead the other cases in different class sessions). Rather than simply presenting its own analysis of the case, the group leads the class in discussing the issues in the case and its use of various analytical tools available to the students. In fact, the group is graded primarily on the extent to which they involve the students in the class and draw them into the discussion, and secondarily on how well they analyzed the case. In this way, the case analyses serve as vehicles for the class to learn about doing a good strategic analysis. The instructor’s role in all this is to immediately correct any misstep—a wrong definition, conception, interpretation, etc.—and spark the discussion with questions should it sag. One final touch—the presenting groups must revise their presentations based on feedback from the class and then send it to the instructor. S/he in turn forwards it to everyone in the class.

**Questions**

We prepared this note based on our experiences facilitating three MBA classes and five undergraduate classes through a strategic analysis of this company, and are indebted to the students in those classes. In all cases, the assignment was the major project in the course—to do a strategic analysis on a real company and propose recommendations as to what it should do in the short-term (one year) and long-term (three years). Such a strategic analysis follows a particular format and encourages the students to use a variety of analytical tools, insofar as the information in the case allows such tools to be used. The students’ analyses covered the gamut from being well done to requiring much more thought. The insights presented in this IM include the best of their ideas, with significant editing and explaining on our part. In addition, we have tried to indicate areas where the students’ work is typically weak and why.

Accordingly, the format of a strategic analysis makes a good structure for this IM. Its key parts comprise the following 13 questions:

1. How would you describe the library-automation industry and the PAC segment in particular?
2. How does A-G stack up against its competitors?
3. Who are A-G’s customers, how are they changing, and what do they need by way of library-automation services?
4. What other environmental trends might affect A-G?
5. How is A-G performing financially?
6. What is A-G’s current strategy?
7. What are A-G’s strengths, weaknesses, opportunities, and threats?
8. Does A-G have a core competence or competitive advantage?
9. What key strategic issues do A-G face?
10. What viable strategic alternatives does A-G have?
11. Which is the best one, and which criteria make sense to use in the assessment?
12. What actions would you recommend to Paul Cope for A-G in the short run (next year)?
13. What recommendation would you make to Paul Cope to position A-G in the long run (three years hence)?

**Analysis**

1. **How would you describe the library-automation industry and the PAC segment in particular?**

At least three kinds of analysis enable one to learn more about the industry and how it’s changing in 2010-11. These include:

(1) Stage of lifecycle

(2) Industry driving forces

(3) Porter’s Five-Forces-Model analysis

(4) Industry-attractiveness analysis

Often, students plunge into industry analysis without knowing precisely in which industry the company in question competes. Labeling the industry correctly is critical in strategic analysis, because analyzing the wrong industry leads to wrong conclusions and an erroneous understanding of the competition that could jeopardize the strategic analysis and its recommendations. For example, the apparel industry and sports-apparel industry are quite different, as are the sports-equipment and golf-equipment industries. In practice, analysts may need to “try out” different industry definitions to determine which analysis gives the best insight for the focal company.

Given the nature of the competition and current trends, one could be forgiven for saying that the industry is simply the library-automation industry. But this is often not enough—is it regional, national, global, or just local in scope? While A-G is a small, local firm, it has national customers (for a while it tried to expand operations into Canada, but the results were disappointing) and competes with national competitors. So the correct label is national in scope, hence the addition of “U.S.” to the industry label. Sometimes, an industry grows at different rates regionally as opposed to nationally or even internationally; for example, the auto industry is growing slowly globally (mature), growing faster in India and China, but saturated in the U.S. In each instance, different competitors could be involved, and a different strategy ultimately adopted. So getting the geographic scope of the industry right is important in a strategic analysis, as is labeling it accurately.

Another issue is whether the overall industry or a particular segment should be studied. The case provides data on other industry segments such as K-12 school libraries and special libraries. As shown in the case, distinct groups of companies participate in each segment. A-G could expand into any of these segments as they could provide attractive growth options for the firm. We discuss expanding into the special-libraries segment as one of the alternatives available to A-G. However, the case goes into considerable detail about the PAC segment in which A-G competes—to the point of discussing the companies that compete only in it—so it makes more sense in the IM to analyze that segment in more detail.

**(a) Stage of lifecycle**

In most industries, lifecycle stage is determined according to these rubrics:

(a.1) Emerging—the industry must be new (not a technologically new version of an old industry), with total revenues growing at <5%/yr

(a.2) Growth—total revenues are growing at >5%/yr

(a.3) Shakeout—the industry is in its growth stage and experiencing a lot of consolidation (M&A activity) [shakeout can also occur during the maturity stage]

(a.4) Mature—revenue growth has slowed to <5%/yr

(a.5) Decline—revenue growth is actually negative, and must be so for several years in a row to distinguish it from periodic industry slumps that may last 2-4 years (e.g., defense industry as the government budgets wax and wane with different administrations, or the mortgage and construction industries following increases and declines in the interest rate)

Knowing which stage of its lifecycle the industry is in suggests certain strategies and not others; for example, innovation and market-expansion strategies are more apt when the industry itself is in the growth stage, while differentiation, acquisition, and technological innovation are more appropriate in the mature stage.

Although the larger library-automation industry in 2010 grew at 13.5% and in 2011 by 4.9%, the PAC segment was experiencing shakeout. As the case states, “in June 2005, in the largest business acquisition in the industry’s history, Sirsi, the smaller of the two, bought out Dynix and became SirsiDynix, making it the largest competitor in the segment with 31% of total installed product.” Although 2009 saw relatively few mergers, LibLime announced it was being acquired by Progressive Technology Federal Systems (PTFS). In 2010 Polaris announced an ownership change; its management team acquired the company from Croydon Company, which had owned it from its inception in 1997. The considerable consolidation activities were a sign of shakeout as companies elected yerrnot to expand a company’s market into other library types.” In addition, the increasing M&A activity had transformed what was once a relatively fragmented industry to one dominated by a few consolidated companies, i.e., it became more concentrated.

**(b) Industry driving forces**

Any strategic analysis should consider whether the industry in which the company competes is changing and, if so, in what ways. Not coming to grips with or understanding such changes is like continuing one’s journey blindfolded.

There are four kinds of driving forces impacting the industry:

(b.1) Technology—there is an increased ability to add features to software (like federated-search applications) and to allow libraries and their patrons to access and link books, articles, and data through the Internet. High-volume libraries also saw Radio Frequency Identification (RFID) technology as a way to improve efficiency, especially through automated-sorting systems, patron self-check, and inventory control. The decline in new Integrated Library Systems (ILS) investments created a burgeoning market for interfaces such as discovery tools that enabled libraries to keep their old ILS while giving patrons a new look. A major trend in the products of the industry was enterprise-level solutions. These solutions did not focus on the current ILS or Inter Library Loan (ILL) products, but aimed at providing frameworks to support a library’s entire operations under one system.

(b.2) Competing business models (products offered)—the traditional business model involved libraries making large up-front investments in licensing fees for proprietary software and modest payments for maintenance over the life of the contract, usually five years. In Software as a Service (SaaS) or cloud-based service, a library hosted its system and data on servers provided by the vendor and paid annual subscription fees in lieu of the licensing fees. According to Auto-Graphics, a proponent of SaaS, it also freed up valuable IT or technical staff to support other projects. Libraries were increasingly interested in more open-source products. The open-source movement allowed customers to own the product’s source code, which could then be modified and customized to fit their specific needs. Although open sourcing currently represented a very small portion of the library-automation business, it could be the start of a permanent shift, and had the potential to disrupt the industry’s traditional business model of licensing.

(b.3) Competitive dynamics, including consolidation—as stated above, the PAC segment was experiencing shakeout. Having said that, the large firms in the industry such as SirsiDynix were experiencing declining sales and very small firms like LibLime were growing rapidly. In addition, while not about competitors, libraries were forming consortia and consortia were banding together to form megaconsortia to drive harder bargains with industry providers.

(b.4) Patrons’ usage expectations—users belonged to a generation that had grown up with technology. Students, for example, demanded a single interface to access not only library information, but also university social activities, professor websites, and e-learning environments as well. Google, bookstores, and other web destinations were also constantly raising the bar. Google’s search engines delivered well-ranked and intuitive results that the industry struggled to emulate. Some libraries used Facebook applications to provide access to their catalog and services in response to patron demand.

**(c) Porter’s Five-Forces-Model analysis**

Figure IM1 shows the familiar “cross” of Porter’s Five-Forces Model for the PAC segment of the library-automation industry and, in each corner, the four analysis boxes (this makes a good format for a slide presentation, and a way of ensuring that the analysis parts are included).

The entries for the principal boxes of Rivals, Buyers, Suppliers, Potential Entrants, and Substitutes are shown in Figure IM1. The corner analysis boxes are explained as follows:

(c.1) Intensity of Rivalry: High. Factors that drive high intensity include: Libraries were more careful in their purchases because of diminishing budgets. Competitors were trying to establish their solution as the prevalent one in the industry (competing business models). Slower market growth over the past several years means the size of the pie had not grown and firms had to compete more intensely for customers. As Paul Cope said, “what we are really doing is taking business from one company to another; business is just moving back and forth.” In addition, switching costs for libraries using SaaS or cloud-based services were very low; however, they were high for libraries with licensing agreements. Since the trend was SaaS or cloud-based services, the switching costs will become much lower for libraries. The SaaS subscription-like model provided a lower investment alternative to libraries with less risk as they could “jump ship” whenever they chose if they were dissatisfied with the service. Rivals were attracting buyers from competitors, e.g., Polaris gaining 25 SirsiDynix customers. Countervailing factors that weakened rivalry were high product differentiation and high customer loyalty. Also, the number of competitors was dwindling reducing the number of rivals and weakening rivalry. However, despite these factors, we believe that intensity of rivalry was high in this industry.

(c.2) Barriers to Entry:High. Barriers to entry included high capital requirements (in the form of investments in technological infrastructure such as increasing hosting capacity and R&D), sizable economies of scale with SaaS (significant declines in costs as the number of customers on SaaS increases), libraries’ loyalty to current providers, and existing competitors struggling to earn attractive profits. Incumbents all had established reputations and technologies, were familiar with libraries and their budgets and consortia, and had the resources to fund R&D, making barriers to entry high. Barriers should be assessed with respect to who is trying to get into the industry. Entry threats exist from incumbents searching to expand their market reach by entering product segments or geographic areas where they currently do not have a presence. Although we conclude that entry barriers were high, low entry threats were moderated by new technologies such as open source, which had brought in some new entrants focused solely on serving libraries desiring open-source software (Liblime, ByWater Solutions, Equinox, etc.).

**Figure IM1—Porter’s Five-Forces Model of the PAC Industry**

**Barriers to Entry**

***High—****High capital requirements, established reputations, and technologies of incumbents*

**Potential Entrants**

Competitors in other segments of the industry

**Intensity of Rivalry**

***High****—Library budgets were constrained and the number of competitors was dwindling (shakeout).*

**Rivals**

Auto-Graphics, Biblionix, Ex Libris, Polaris Library Systems, Liblime, SirsiDynix, The Library Corporation, etc.

**Buyers**

U.S. public and academic libraries, including consortia

**Suppliers**

Providers of hardware and software

**Bargaining Power**of buyers was ***High***;  
of suppliers was ***Low***

**Threat of Substitutes**

***Low****—Good substitutes to the products of the industry were not readily available*

**Substitutes**

The Internet

(c.3) Bargaining Power of Buyers: High. Factors that support high bargaining power of buyers include consortia and mega consortia that were large buyers and could demand concessions from industry members. Companies in the industry by and large were not differentiated and customers had a choice with little or no switching costs with SaaS. Demand was weak. The identity of buyers added prestige to sellers’ list of customers. The quality and quantity of information available to buyers had improved. Buyers could and did postpone purchases if they did not like the present terms being offered. High buyer power was somewhat moderated by the fact that sellers’ products delivered quality that was important to buyers. Despite this variable, we still believe that buyers had a stronger bargaining position particularly in terms of controlling the terms of trade such as price.

(c.4) Bargaining Power of Suppliers:Low*.* Needed supplies were generally commoditized. New substitute inputs were emerging due to advances in technology. Since industry members were software firms, there was a credible threat that they could vertically integrate backward to produce their own supplies. Some of the software supplied was highly specialized, giving the suppliers of these products greater bargaining power. However, even in the case of specialized software, incumbent firms had a strong bargaining position since they could acquire the skill set to produce what they needed.

(c.5) Threat of Substitutes: Low. The industry provided libraries with products that enabled them to organize the many databases of print and digital holdings, provide superior customer service to their patrons, manage their operations including acquisitions, accounting, etc., and sundry other activities. The threat of substitutes was almost zero for the industry’s products. Libraries subscribed to many publishers’ offerings, such as the 150 or so journals of Emerald Publishing, which allowed patrons to search and download any article, not possible just by surfing the Internet. A possible substitute was current legacy systems as libraries were holding on to these for as long as possible in the face of shrinking budgets. As stated in the case, “libraries tended to defer replacing their legacy systems for as long as possible…but provide a new-generation interface to modernize its look for patrons.” However, we do not believe that this would moderate the threat of substitute products primarily because substitutes were products of other industries. The new systems and interfaces being used to modernize the legacy products were produced by the industry and therefore were not substitutes. Perhaps Google and Amazon could be considered substitutes; however, Google searches were shallow and only covered publicly available information. Therefore, good substitutes were not readily available for what the industry provided and the price-to-performance of “substitutes” was not comparable to the industry’s products.

Because entering the special-libraries segment could be a viable strategic option for A-G (we’re skipping ahead of ourselves a bit here), it makes sense to do a Five-Forces analysis of that segment too (see Figure IM2).

**Figure IM2—Porter’s Five-Forces Model (Special-Libraries Segment)**

**Intensity of Rivalry**

***Moderate****—sizable market compared to number of competitors, which are all differentiated.*

**Potential Entrants**

Competitors in other segments of the industry

**Barriers to Entry**

***High—****High capital requirements, established reputations, and technologies of incumbents*

**Buyers**

U.S. special libraries (corporate)

**Rivals**

CyberTools, EOS International, Inmagic, Keystone Systems, etc.

**Suppliers**

Providers of hardware and software

**Bargaining Power**of buyers was ***Low***;  
of suppliers was ***Low***

**Substitutes**

The Internet

**Threat of Substitutes**

***Low****—Good substitutes not readily available*

Although the special-libraries segment comprised a meager 1.4% of the library-automation industry, it had relatively few competitors in it all touting their own differentiated systems to a sizable corporate market. Thus, compared to the PAC segment, intensity of rivalry is lower and the bargaining power of buyers is lower—their only choice is to buy one of the systems offered by companies in the industry, which companies can charge premium prices because they are all differentiated. As with the PAC segment the threat of suppliers is very low for the same reasons provided above. While barriers to entry are high as with the PAC segment, they are not so high as to prevent A-G from entering the segment because it already has a reputation, can fairly easily produce competitive products and, with astute borrowing, can finance entry into the segment. The threat of substitute products is low for this segment as it is for the PAC segment for the same reasons as given above.

**(d) Industry-attractiveness analysis**

This is one-half of the analysis required for the GE Matrix, which plots industry attractiveness against competitive strength. The GE Matrix is useful because it combines an assessment of the industry with an assessment of the company’s competitive strength. The analyses just reviewed (industry lifecycle, driving forces, Porter’s Five Forces) contribute to the overall assessment of industry attractiveness.

There are several steps involved in this analysis:

(d.1) Identify 5-6 factors that most characterize the attractiveness (or otherwise) of an industry—I derived these factors by trying to answer the question, “What would an ideal industry look like if I were competing in it?” I would answer: a high-growth industry, large and growing markets, highly profitable, no regulation, low or no competition, and so on. These then became the basis for the factors, which could be different for other industries.

(d.2) Give these factors weights that add to 100 (if you consider the factors equally important, give them equal weights; otherwise give factors you deem more important more weight, and those less important less weight). While no set of weights is “correct,” a set produced by a group of students should be defensible, i.e., the group should have a reason for the weights (this applies to all other “subjective” parts of these analytical tools—the students should be encouraged to defend their choices and forced to think them through).

(d.3) Rate the industry in question on each factor, on a scale of 0 to 1.0, 1.0 being best. Be careful when rating intensity of competition or degree of regulation—the more of either that you believe exist in the industry, the lower the rating, as they would cause the industry to be *less* attractive.

(d.4) Multiply the weight and the rating for each factor in the last column; add the products to produce a percentage figure that is the Industry-Attractiveness (IA) Index. Table IM1 shows an industry-attractiveness analysis for the PAC segment.

**Table IM1—Industry-Attractiveness Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **Weight** | **Rating** | **Product** |
| Industry growth rate | 30 | 0.5 | 15.0 |
| Size of potential market | 25 | 0.8 | 20.0 |
| Intensity of competition | 20 | 0.3 | 6.0 |
| Profitability | 15 | 0.7 | 10.5 |
| Degree of regulation | 10 | 0.9 | 9.0 |
| **TOTALS** | **100** | **I. A. Index** | **60.5** |

Just about everything in this analysis is subjective; the only way that the result becomes more credible is when a group of people with experience in the industry (and access to more data than can be provided in a case) does the analysis. For that reason, it makes little sense explaining the weights—yours or the students’ could well be different and more “right” than mine—except to say that they should be reasonable. Again, the choices should be defensible; “guessing” is unacceptable. Regarding the ratings:

(1) Industry growth rate—the industry was in shakeout and there is some evidence to point to slower growth than in the past.

(2) Size of potential market—the market was not only national, but also international, even though Auto-Graphics competed only in the U.S. with a small operation in the Canadian market. However, the markets were limited to those libraries that were computerized and no longer still running on card catalogs.

(3) Intensity of competition—this was high and probably increasing (0.2 even would have been OK).

(4) Profitability—this refers to the profitability of the industry, not A-G. It was difficult to assign a rating because the profitability of competitors in the industry was unknown as was the rate of change of profitability in the industry. However, none of the competitors appeared to be losing money so a rating of somewhere in the region 0.5-0.8 seems reasonable.

The case does not reveal any federal or state regulation in installing computer-based library systems (1.0 would have been OK; I used 0.9 because I wasn’t sure).

**(e) Summary of Industry Attractiveness**

The PACsegment of the library-automation industry appears to be a moderately attractive segment. Porter’s Five-Force analysis reveals that this industry has a moderate attractiveness from the perspective of profit potential. High rivalry and high customer bargaining power both make the industry unattractive; however, these forces are moderated by high entry barriers that lower the threat of entry, low bargaining power of suppliers, and low threat of substitutes. In sum, this is a moderately attractive industry. Although again very subjective, the industry-attractiveness matrix also shows an attractiveness score of 60.5%, which supports the moderate profit potential of the Five-Force analysis.

1. **How does Auto-Graphics stack up against its competitors?**

Competitors are “anyone that takes sales away from you.” This would include direct competitors in the industry and substitutes (if any).[[2]](#footnote-2)

**(a) Critical-Success-Factor Analysis**

This analytical tool compares the company in question directly with its major competitors along several critical success factors. The definition of a critical success factor (CSF) is something the company must do well in order to succeed in its industry; CSFs attach to an industry, not a company.[[3]](#footnote-3) If one thought hard about it, one could come up with a list of a dozen things that a company does well (not to be confused with a competitive advantage). The list should then be pruned to 5-6 CSFs—fewer would render the analysis suspect, while many more would create an undue burden to know that much more about each competitor. The ratings, on a scale of 1-10, 10 being best, are again subjective and easy to challenge[[4]](#footnote-4)—though students should be constantly encouraged to defend whatever ratings they use (“Why did you rate SirsiDynix as having most knowledge and experience? Why did you rate its reputation, customer service, and management the worst of this group of competitors?”). While the numbers themselves are more meaningful the more experience one has in the industry in question, the discussion surrounding them is often insightful and revealing (as is a discussion of how analysts in the “real world” would obtain missing information to make their analysis meaningful). Table IM2 shows a sample CSF analysis of A-G and four of its principal competitors.

**Table IM2–Critical-Success-Factor Analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Critical Success Factors** | **Auto-Graphics** | **Polaris** | **SirsiDynix** | **The Library Corp** | **Liblime** |
| Knowledge and experience | 9 | 9 | 10 | 9 | 8 |
| Reputation | 8 | 8 | 5 | 7 | 9 |
| Customer service | 9 | 9 | 6 | 8 | 9 |
| Management | 9 | 9 | 6 | 6 | 9 |
| Financial strength | 7 | 7 | 10 | 7 | 9 |
| **Total** | **42** | **42** | **37** | **37** | **44** |

Again, it is hard to discuss these assessments as the case provides insufficient information on the CSFs. However, the following comments explain some of these ratings:

(a.1) The totals would indicate that Liblime was the strongest competitor. Whether true or not, we do know that it was the only company offering open-source solutions and was growing very fast (so much so that it was acquired in 2010 by PTFS)—so it must have been doing a lot of things right.

(a.2) Despite it being the thousand-pound gorilla in the industry, SirsiDynix lost a lot of customers after the merger and revenues plummeted; its reputation took a beating, and management wasn’t doing a good job of post-merger integration.

(a.3) The Library Corporation likewise was suffering a six-year decline in sales which had to reflect negatively on management; the sales decline also caused its financial strength to erode.

(a.4) Auto-Graphics and Polaris Library Systems could be in the middle of the pack—solid competitors with good management. Their financial strength was sensitive to sales and keeping costs low, and both were struggling with this (both were growing, but slowly).

Several other CSFs could also be viable candidates, such as offering a technology in demand, breadth of services offered, geographical coverage, possessing a distinctive competence, marketing strength, and number of segments served. So there is no “magic” in the CSFs selected, other than their relevance to the case and the ability to provide reasonable ratings.

(a.5) The technique is a useful one to learn to use, as it is one of the few that compares a company with its competitors. We allow the analytic tool to be used *if* there is enough information in the case or if the guesses are educated (i.e., can be explained or defended), but not otherwise.

Table IM2 could be done as a weighted analysis if the analyst (instructor or students) feels strongly that the factors are not equally important. The method would be similar to that shown in Table IM1 where, for each factor, a weight is assigned and all weights must add up to 100. The weight for each factor is then multiplied by the rating to provide a product, and the products for each company are totaled.

Finally, Table IM2 can yield another kind of information. Rather than looking at which company has the biggest total and which the smallest, and why, one could look horizontally and see how the companies in the industry compare on each critical success factor. Three insights emerge:

(1) All companies were knowledgeable and experienced (in the technology they offered)

(2) SirsiDynix and TLC had the worst reputations and managements (their sales were declining and customers were defecting)

(3) SirsiDynix and Liblime were strong financially—the former because of its sheer size and the latter because of extraordinarily strong growth.

**(b) Competitive-Strength Analysis**

The second part of the GE Matrix—Competitive-Strength Analysis—assesses how strong a competitor Auto-Graphics is—see Table IM3. The format of the analysis is very similar to Table IM1 but with factors that more closely resemble critical success factors.[[5]](#footnote-5) They are chosen based on knowledge of the company and its industry and competitors; a group of students would pool their knowledge and, through challenges and argument, come up with a pretty good list. Even managers in the real world, if using this technique, would go through a similar process that would also include the weights and ratings themselves. Care should be taken not to include just factors that are company strengths, but all factors whether or not they are strengths. The instructor’s role here is to assess such work for reasonableness and some thought having gone into developing the matrix.

**Table IM3—Competitive-Strength Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **Weight** | **Rating** | **Product** |
| Innovative capability | 22 | 0.9 | 19.8 |
| Industry/competitive knowledge | 18 | 0.8 | 14.4 |
| Reputation | 18 | 0.8 | 14.4 |
| Customer relationships and service | 15 | 0.8 | 12.0 |
| Management | 15 | 0.9 | 13.5 |
| Financial strength | 12 | 0.3 | 3.6 |
| **TOTALS** | **100** | **C. S. Index** | **77.7** |

Again, everything in this analysis—the factors, their weights, and how A-G rates on each factor—is subjective; the only way that the result becomes more credible is when a group of people with experience in the industry does the analysis. For that reason, it makes little sense explaining the weights—yours could well be different and more “right” than mine—except to say that they are reasonable. This analysis reveals that Auto-Graphics was a strong competitor in every respect except its financial strength (see later analysis).

A-G appears to stack up well against the competition. It had strong management, strong reputation, good customer service, and strong innovative capability. Its major area of weakness was its financial strength. While competitors such as Ex Libris and SirsiDynix experienced declines in the number of customers and total products installed, A-G had experienced strong overall growth in both categories. It had been responsive to technological changes in the industry and had deep product breadth, particularly for a small company. A-G Canada continued to drain the company of resources, thus contributing to its weak financial performance.

**(c) The GE Matrix**

The IA Index is plotted against the CS Index in what is called the G.E. Matrix (after General Electric that devised the tool), see Figure IM3. Overall, A-G was a moderately competitively strong firm (despite its weak financial performance) in a moderately attractive industry.

**Figure IM3—G.E. Matrix for A-G and the PAC Segment**

100

Industry Attractiveness

100

0

Competitive Strength

1. **Who are Auto-Graphics’ customers and how are they changing?**

The segment in which Auto-Graphics is competing defines its target market—public and academic libraries, including the consortia and megaconsortia that those libraries form in some places. While the overall market was worldwide (SirsiDynix was in more than 70 countries), Auto-Graphics’ target and served markets were primarily those in the U.S., though it had a small presence in Canada.

New libraries were not being formed in enough numbers in the U.S. or Canada to register any overall growth and the budgets supporting both public and academic libraries were shrinking or remaining low. In addition:

(1) Public and academic libraries were increasingly becoming part of consortia, migrating their PC-based systems to centralized, web-based systems.

(2) Public—and to a lesser extent—academic libraries were becoming increasingly interested in open-source, ILS-support products; they were seduced by not having to pay a license fee, though appeared blind to higher overall costs for installation, implementation, and set up. The open-source business model had the potential to disrupt the traditional business model of licensing.

(3) Demand from non-U.S. libraries was increasing as library automation began to take hold in emerging and developing countries. According to Paul Cope, the need was better met by companies that already had a presence in those markets (serving a new client without a presence required significant capital investment).

(4) Public libraries were changing and becoming more like community centers, encouraging patrons to come in for reasons other than borrowing books.

1. **What other environmental trends might affect Auto-Graphics?**

Three were affecting every company in the industry:

(1) Public budgets for funding public and academic libraries were cyclical and based on fluctuations in the economy. In 2009, the U.S. and Canadian economies were well into a severe recession caused by the mortgage meltdown in the U.S. and the ripple effects it caused—foreclosures, bank failures, no new construction, and unemployment, to name a few. As a result, the ability of these libraries to buy new systems or upgrade their existing ones was sharply curtailed. Both U.S. and Canadian libraries experienced sharp declines in public funding.

(2) Technological advances continued at a rapid pace, and the case goes into detail describing the different business models (licensing, SaaS, cloud-based services, open-source), systems (ILS, ILL, federated search, enterprise-wide solutions), and unique products each company produced. Networking and web-based solutions were beginning to replace PC-based systems.

(3) Socio-Cultural—library patrons, many growing up with the convenience and speed of Google searches, were placing perhaps unreasonable expectations on libraries for their interfaces to be as easily accessed and as instantly productive. Libraries were experiencing a renaissance as they attempted to reinvent themselves to respond to patron demands emanating from new technologies.

1. **How is Auto-Graphics performing financially?**

Table IM4 shows year-to-year changes for income-statement line items, Table IM5 shows common-size statements, and Table IM6 presents key data and financial ratios, all for 2007-2011.

**Table IM4—Year-to-Year Changes, Income Statement, 2007-11**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Percent Change | Percent Change | Percent Change | Percent Change | 5-Year Average |
|  | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2007-11 |
|  |  |  |  |  |  |
| **Total revenues** | **-1** | **-5** | **-10** | **1** | **-4** |
| Costs and expenses: |  |  |  |  |  |
| Cost of sales | -12 | 4 | 4 | -7 | -3 |
| Research and development (R&D) | -27 | 3 | -6 | 10 | -5 |
| Sales, marketing and customer service | 5 | -6 | 8 | -24 | -5 |
| General and administrative | 22 | -4 | -4 | 3 | 4 |
| Total costs and expenses | -1 | -3 | 3 | -12 | -3 |
| Operating income (EBIT) | -5 | -58 | -699 | -115 | -219 |
| Other income (expense): |  |  |  |  |  |
| Foreign currency adjustment |  |  |  | -106 | -106 |
| Other expense (income), net | -46 | -76 | -111 | 2,442 | 552 |
| Net income before taxes (NIBT) | -9 | -59 | -734 | -115 | -229 |
| Income tax expense (benefit) | -8 | -185 | -261 | 127 | -82 |
| **Net income after taxes (NIAT)** | **-9** | **-53** | **-696** | **-110** | **-217** |

In Table IM4, several points deserve mention:

(1) Revenues declined only slightly between 2007 and 2008 but by 10% between 2009 and 2010, reflecting the impact of the economic conditions in both the U.S. and Canada. The slight upsurge in revenues in 2011 from 2010 also parallels the slow and uncertain economic recovery in both countries.

(2) A-G consistently invested in R&D over its history, but was forced to make a sharp cut in 2008 due to macro-economic conditions. It had since increased its investments in R&D in anticipation of improved economic conditions.

(3) Income from operations (EBIT) declined by 699%, net income before taxes (NIBT) declined 734% and net income after taxes (NIAT) declined by 696% between 2009 and 2010. All three profit indicators (EBIT, NIBT and NIAT) had been declining since 2007 because of the state of the U.S. and Canadian economies. Declining NIAT and negative NIAT in 2010 were the reasons for its weak financial performance.

**Table IM5—Common-Size Income Statements, 2007-2011**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **2007** | **2008** | **2009** | **2010** | **2011** |
| Total revenues | 100% | 100% | 100% | 100% | 100% |
| Costs and expenses: |  |  |  |  |  |
| Cost of sales | 25% | 22% | 25% | 29% | 26% |
| Research and development (R&D) | 11% | 8% | 9% | 9% | 10% |
| Sales, marketing and customer service | 43% | 45% | 45% | 53% | 40% |
| General and administrative | 16% | 20% | 20% | 21% | 22% |
| Total costs and expenses | 95% | 96% | 98% | 113% | 98% |
| Operating income (EBIT) | 5% | 4% | 2% | -13% | 2% |
| Other income (expense): |  |  |  |  |  |
| Foreign currency adjustment |  |  |  | -1% | 0% |
| Other expense (income), net | -1% | 0% | 0% | 0% | 0% |
| Net income before taxes (NIBT) | 5% | 5% | 2% | -14% | 2% |
| Income tax expense (benefit) | 0% | 0% | 0% | 0% | 1% |
| Net income after taxes (NIAT) | 5% | 4% | 2% | -14% | 1% |

In Table IM5, three points are worth making:

(1) Sales, marketing, and customer-service expenses as a percent of total revenues increased from 43% in 2007 to 53% in 2010. This fits with the industry trend in which many firms including A-G were gearing up for new product development.

(2) Total costs and expenses grew as a percentage of total revenues from 95% to 113% in 2010 and down to 98% in 2011. Same reason as mentioned above.

(3) EBIT, NIBT, and NIAT steadily declined as percentages of total net sales from 2007 to 2010 due to significant declines in revenues as a result of the economic recession in the U.S. and Canada.

**Table IM6—Key Financial Ratios, 2007-2011**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Financial Ratio** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Current Ratio | 1.07 | 1.24 | 1.18 | 0.75 | 0.83 |
| Total Asset Turnover | 1.52 | 1.44 | 1.28 | 1.18 | 1.21 |
| Debt-to-Equity Ratio (%) | 58.29 | 53.57 | 54.06 | 95.24 | 84.87 |
| Net Profit Margin (%) | 4.84 | 4.42 | 2.17 | -14.44 | 1.45 |
| Return on Equity (%) | 11.64 | 9.75 | 4.28 | -33.18 | 3.24 |
| Return on Assets (%) | 7.36 | 6.35 | 2.78 | -16.99 | 1.75 |

In Table IM6, several points are worth noting:

(1) Current ratio dipped below 1.0 in 2010 and 2011, resulting in negative working capital.

(2) Declining NIAT caused Net Profit Margin (NPM) to decline in 2009 and become negative in 2010 and 2011; however, it recovered in 2011.

(3) Return on Equity (ROE) and Return on Assets (ROA) also began to drop in 2008 and were negative in 2010 and 2011, caused by the same drop in NIAT.

(4) All three profit ratios (NPM, ROE and ROA) had been declining since 2008, but recovered in 2011.

(5) Total-asset turnover had been declining since 2008, meaning that each dollar of assets was generating fewer sales.

(6) Debt-to-Equity (D/E) ratio hovered around 55% from 2007 to 2009 with sharp inclines in 2010 and 2011. This shows A-G’s greater reliance on debt as the recession deepened and there was further erosion in its equity. However, a D/E ratio under 100% is not problematical.

(7) A-G’s financial performance during the period under evaluation could be explained by the economic recession and slow subsequent recovery in both the U.S. and Canada.

**(a) Financial Conclusion**

Between 2007 and 2010, Auto-Graphics was performing poorly financially but its financial condition, while needing improvement, was OK. In 2011, its financial performance began to improve with a 1% gain in total net revenues and NIAT in the positive range compared to the year before. A-G needed to find ways to grow revenues overall in its North American market. The library market was mature and not expected to grow further. Although the industry seems to have experienced positive growth from 2009 to 2011, the fundamental problems that libraries faced with decreasing budgets were not expected to change as localities continued to look for ways to reduce their budgets. Finding additional sources of revenues and making a profit constituted its major financial challenges. Its financial condition included over $610,000 in cash and considerable borrowing power (D/E ratio well under 1.0), though it had negative working capital.

1. **What are Auto-Graphics’ current strategies?**

Auto-Graphics’ current strategy was concentration, both product (innovation) and market development. The case states that it began developing products for the financial-services market in 2007, and that market itself was new for the company. While the company’s SaaS business model was not unique, all the products it offered, including the AGent line and others—were unique, so we conclude that it was also pursuing a strategy of differentiation.

1. **What are Auto-Graphics’ strengths, weaknesses, opportunities, and threats?**

**(a) Strengths**

(a.1) Sixty years of industry experience—The firm had been in the industry since 1950 and knew its competitors, industry, and customers well

(a.2) Loyal, hardworking, and adaptable employees with average tenure of 13 years with company

(a.3) Innovative—It had evolved as technology had changed the industry. It consistently invested in R&D even during bad economic times

(a.4) Wide range of proprietary products (for ILS, ILL, discovery products, etc.)—Its suite of products rivaled those of much larger competitors

(a.5) Technologically advanced—as indicated by products such as AGent Iluminar

(a.6) SaaS business model—A-G had made a permanent shift to SaaS and abandoned the licensing model all together

(a.7) Strong leadership in Paul Cope and the board of directors with 60 plus years of industry experience

(a.8) Customer-oriented—continually taking the pulse of customers in seeking and getting feedback, and a proven ability to retain customers

(a.9) Good reputation in the industry

(a.10) Decent cash balance of over $600,000 in 2011 and a $1.0 million credit line at its bank

**(b) Weaknesses**

(b.1) Poor financial performance—negative NIAT in 2010 and declining NIAT, net-profit ratios, and revenues until 2011

(b.2) Financial condition that needs improving

(b.3) Working capital was negative in 2010 and 2011

(b.4) Limited plans for international expansion (global market)

(b.5) Failed expansion into Canada

(b.6) Dependent on customers that rely on reduced state budgets

**(c) Opportunities**

Opportunities are narrowly defined here as *product-market issues,* i.e., any combination of current, improved, or new product (or service) for a current, expanded, or new market.[[6]](#footnote-6) We see A-G as having the following opportunities:

(c.1) ILS legacy migrations—A modest number of libraries were still using ILSs that were being phased out (such as DynixClassic that was phased out by SirsiDynix) creating new sales prospects for firms such as A-G.

(c.2) Growth of discovery products and other non-ILS software sales—Libraries were waiting to replace their ILSs due to financial constraints and were relying on discovery products such as interfaces to modernize the look of their older ILSs. This created a burgeoning demand for discovery products.

(c.3) Emergence of new technologies including enterprise-level solutions such as Alma by Ex Libris and WMS by OCLC

(c.4) Changing user expectations. Technology-savvy users were accustomed to Google-like searches driving technological innovations in the industry’s products.

(c.5) Open-source movement. A-G could provide its customers with the source code for free upgrade paths as an alternative to open source.

(c.6) SaaS or cloud-based services were increasing efficiency for firms and lowering costs for libraries. They were also making it possible to pool resources via mega consortia.

(c.7) New markets like financial services and corporations. Continued improvements in the economy might create opportunities in adjacent segments such as the corporate/enterprise libraries market.

(c.8) Canadian market—Five percent of A-G’s revenues came from outside the U.S. via A-G Canada. Since A-G already had a presence in Canada, it might be a good place to start to raise its profile in the international market. The Canadian market was experiencing an upsurge in demand and the international arena was slated to continue to grow and provide additional opportunities for A-G. A-G Canada could be the testing ground for A-G to develop products for the broader international market.

**(d) Threats**

(d.1) Open-source movement, championed by fast-growing Liblime, may replace proprietary technology.

(d.2) Downswings and continued reductions in state budgets for public, school, and academic libraries.

(d.3) Libraries were slow to change and loyal to original vendors making them a harder sell.

(d.4) Severe downturn in housing and financial sectors and subsequent negative impact on funding for libraries across all segments

(d.5) User expectations constantly changing due to rapid changes in technology

(d.6) Industry in shakeout and growing slowly in 2011

**SWOT Summary**

As was indicated above, A-G was an attractive to moderately attractive firm. It had a strong management team with many years of experience in the industry. It had a strong reputation in the industry as well as good customer service and strong innovative capability. It had been responsive to technological changes in the industry and had deep product breadth, particularly for a small company. While competitors such as Ex Libris and SirsiDynix experienced declines in the number of customers and total products installed, A-G had experienced strong overall growth in both categories. Its major area of weakness and one that was concerning was its financial performance. A-G had market opportunities in the areas of enterprise-market development and penetration/expansion in the U.S. and Canadian markets. The open-source movement, although currently only a small percentage of industry share, could be a significant threat to A-G and other proprietary-software providers. The largest firm in the segment was Liblime, the dominant open-source competitor. A-G must find a way to generate additional growth in revenues from sources within and outside the library market. One option was to be acquired by a stronger competitor such as OCLC or Interactive Interfaces. It could also consider merging with other smaller players to increase its market power in the industry or to move into adjacent segments of the industry such as the special-libraries segment. Overall, A-G was an attractive to moderately attractive firm in a moderately attractive industry.

1. **Does Auto-Graphics have a core competence or competitive advantage?**

Companies that possess a core competence are said to have a sustainable competitive advantage, resulting in above average returns. In order to discern whether a company has a core competence (defined as a capability that has strategic significance), first try to list as many company capabilities as possible. Then, for each one, test it against the four criteria shown in Table IM7. Capabilities are core competences only if they satisfy all four criteria, and Table IM7 shows that Auto-Graphics has only one core competence or sustainable competitive advantage among the several things it does well.

Despite a lack of specific information in this case to use this tool, it is such an important tool about such an important concept in the course that we encourage students to use it. Without undertaking it, students would casually state that the company had this or that competitive advantage; using this tool forces them to at least think it through and justify their choice.

Table IM7 shows the results of a core-competence analysis for Auto-Graphics using four sample capabilities. The case states that providing customers with the latest software version of its core products was something that set Auto-Graphics apart from its competitors, but it’s not *quite* a core competence because it is possible to compete in the industry without doing that (so it is *not* nonsubstitutable). Therefore, one could say it is a temporary competitive advantage for Auto-Graphics, along with its strong customer service.

**Table IM7–Core-Competence Analysis for Auto-Graphics**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Capability** | **1. Is it rare?** | **2. Is it valuable?** | **3. Is it costly to imitate?** | **4. Is it non-substitu-table?** | **Competitive Advantage** | **Returns** |
| Customer service | No | Yes | Yes | Yes | Temporary | Above average during the advantage |
| Innovative capability | No | Yes | No | Yes | Parity | Average |
| SaaS business model | No | Yes | No | No | Parity | Average |
| Providing customers with the latest version of its core products | Yes | Yes | Yes | No | Temporary | Above average during the advantage |

1. **What key strategic issues does Auto-Graphics face?**

Coming up with strategic issues is an act of synthesis with respect to the case so far. Which of all the external and internal factors identified in the situation analysis are critically important? Note that the key strategic issues are all expressed as questions,[[7]](#footnote-7) typically taking one of two forms: “How can . . .?” and “Should . . .?” How to decide which to use? Consider this one: “Should A-G increase its revenues and profits?” Answer: Yes, so it’s not a strategic issue. But *how* should it do that? Answer: Unclear, so this could be a strategic issue.

Should Auto-Graphics:

(1) Enter the corporate segment? (It had previously explored developing products for the financial-services industry.)

(2) Expand in the international arena?

(3) Expand its customer base?

(4) Be acquired by one of its larger competitors?

(5) Merge with one or more competitors?

(6) Increase its R&D spending?

(7) Offer discovery and other non-ILS-software products?

(8) Offer enterprise-level solutions?

(9) Provide its customers with the source code for free upgrade paths as an alternative to open source?

How can Auto-Graphics:

(1) Find additional sources of long-term revenues and profits?

(2) Effectively sell its products in the midst of shrinking or low library budgets?

(3) Compete better against existing rivals?

(4) Take advantage of ILS migrations?

(5) Raise more equity capital?

This is by far the weakest area in students’ analyses. Without good strategic issues (students should aim for about 8-10), it is impossible to create good alternative bundles. Some students come up with only 3-4 strategic issues, and their resulting bundles are trite or infeasible. Strategic issues are a combination of synthesizing what has gone before and taking advantage of opportunities; students find doing this difficult perhaps because there are no “right” answers.

1. **What viable strategic alternatives does Auto-Graphics have?**

When creating strategic alternatives, five conditions must be met. The alternatives must be:

(1) Feasible (the firm must have or be able to access the necessary resources to implement the alternative)

(2) Lead to success (must achieve objectives that, to the firm, signify successful performance)

(3) Substantially differ from each other (as opposed to doing much the same thing in each alternative but growing, say, by 5%/yr. in one, 10%/yr. in another, and 15%/yr. in the third)

(4) “Stretch”the companyin some way (the exception is if the company is currently doing exceptionally well, then the ‘status quo’ could form one bundle, the challenge being to come up with something better)

(5) Address all the strategic issues. With respect to this last condition, if there are one or more strategic issues unaddressed at the end, then they should be deleted from the list of strategic issues—clearly, they were not as important or critical as first thought. Conversely, if one of the alternatives contained a bullet for which there was no strategic issue listed, one should be added.

Finally, a minimum of twoalternatives (or “bundles” as we prefer to call them, since they contain strategies, strategic intents, goals, and programs) should be developed for there to be a decision at all; three is better (students can usually come up with three), while four or more is extremely difficult.

Defining a strategic alternative as a combination of a future vision, strategy, and course of action, Auto-Graphics has at least three strategic-alternative bundles that meet the above conditions:[[8]](#footnote-8)

**(a) Aggressively pursue the sale of its products (including MARCit) in Canada (as a basis for pursuing the international market)**

(a.1) Emphasize A-G’s long history in bibliographic utilities that dates back to the seventies (as opposed to the newer SkyRiver and LibLime products)

(a.2) Maintain and/or raise the quality of MARCit bibliographic records by ensuring high hit rates so it can compete on differentiation based on quality and efficiency

(a.3) Invest in marketing to educate customers and inform about MARCit enhancements and pricing

(a.4) Offer special deals for customers who purchase MARCit within the first month of release

(a.5) Develop multi-language capabilities in the AG suite of products

(a.6) Increase R&D budget

(a.7) Bundle MARCit as part of AGent VERSO and aggressively market in both the U.S .and Canada

(a.8) Form agreements with competitors that do not have their own bibliographic utilities to enhance and bundle MARCit with their ILS

(a.9) Tightly control costs

(a.10) Continue all current programs

(a.11) Maintain MARCit market share among special and academic libraries in Canada and increase market share among public libraries in Canada and all libraries in the U.S.

(a.12) Finance through cash and debt

**(b) Aggressively pursue libraries that are ready for ILS migrations and/or in licensing agreements, with a focus on California**

(b.1) Emphasize A-G’s California roots as well as its 60-plus years of industry experience

(b.2) Focus the sales team on California libraries in the PAC segments that are currently in licensing agreements, utilizing non-flagship ILSs, desiring to migrate to a SaaS mode, and/or automating for the first time

(b.3) Emphasize the cost advantages of AGent Verso SaaS model versus licensing

(b.4) Create and use focus groups with key public, private, and academic librarians in the targeted group to hone in on their needs

(b.5) Develop an aggressive marketing plan based on focus group data targeted at focal libraries including email blasts, webinars, etc.

(b.6) Develop a focused promotion strategy that would incentivize target libraries to use AGent Verso suite of products

(b.7) Tightly control costs

(b.8) Continue all current programs

(b.9) Increase market share in California

(b.10) Finance through cash and debt

**(c) Diversify into the special-libraries market**

(c.1) Develop products for the special-libraries market such as financial libraries in need of federated searches

(c.2) Partner with beta clients in the focal industry to understand their needs and to develop appropriate new products

(c.3) Leverage current technology and expertise to develop these new products

(c.4) Create a marketing plan to target the corporate sector

(c.5) Increase R&D budget

(c.6) Raise additional equity capital

(c.7) Tightly control costs

(c.8) Continue all current programs

(c.9) Maintain market share in its current segment and increase share in the enterprise market

(c.10) Finance through cash and debt and investor capital

We agree with anonymous reviewers that a viable bundle for A-G that could have been developed was acquired.” As discussed above, the industry is currently in the shakeout stage with many of the larger competitors choosing to acquire other firms as opposed to expanding outside of the industry segment. A-G’s strengths in technological innovations, its full product suite, and its weakened financial condition make it a likely acquisition candidate. Large firms in the industry such as SirsiDynix and Ex Libris and medium-sized players such as OCLC and Interactive Interfaces could gain further market power by acquiring a smaller competitor like A-G. A-G was also differentiated in that it was one of only four companies with its own bibliographic utility, MARCit. A-G might be an attractive candidate for either OCLC or Interactive Interfaces, the two largest contenders in the battle for bibliographic utilities. The trend in the industry is one of consolidation as the inexorable changes in technology continue to make it difficult for firms to amass the resources necessary to stay abreast of technological advancement to remain competitive.

We did not consider this option for a number of reasons. The first is that the board of directors, including the CEO Paul Cope, does not consider this a viable option. Secondly, the firm is closely held and has been owned by the Cope family for over 60 years. This, in addition to the first reason, makes it difficult to acquire the firm. Third, the firm has demonstrated the ability to change over time as circumstances and technology have changed; CEO Paul Cope has refused to give in when things have gotten tough. So the firm sees its current situation as a challenge that it can overcome as it has done throughout its history.

That said, instructors could challenge students to create a fourth “be acquired” bundle (or even merge with particular competitors) as consultants to A-G bound to give it their best advice. Instructors should make sure that the new bundle conforms to the criteria for good bundles, using the three given in this IM as models. Although we know that Paul Cope and his board would not adopt such an option, students might nevertheless believe that because the PAC segment is in shakeout and competition is intensifying, A-G should consider it as a bona fide alternative bundle. They should be encouraged to do the analysis and, should the be-acquired bundle be chosen, try to be as persuasive as possible in presenting their choice. The challenge would be in persuading management they would be better off being acquired than pursuing any other alternative. And this is at the heart of strategic planning—looking at viable strategic alternatives and arguing well enough to persuade top management to implement the one you think is best.

Students find it difficult to create bundles, all of which meet the criteria. Frequently, one bundle is developed in much more detail than the others and—surprise—that is the winning bundle. So watch for every bundle being a good bundle.

Notice that each of the above bundles consists of about 9-10 bullets (an acceptable level of development is eight bullets). The last four bullets are the same for every bundle (except for financing in bundle 3, which includes investor capital). Given the company’s deteriorating profitability, every effort to control costs should be taken. Adding “continue current programs” is critical because the company should not stop doing what it is currently doing in order to implement a particular bundle, but rather implement the bundle in addition to what it is currently doing. Also, every bundle must have a strategic intent, which involves either its position in the industry (maintain leadership, become #1, etc.) or maintaining or increasing market share.[[9]](#footnote-9)

Finally, the bundle must include how it will be financed. If the company is constrained financially in any way, i.e., has little or no cash, negative cash flow, and a D/E ratio above 2.0, or any combination of these, then the viability of the strategic alternative is directly affected. One cannot do grand things, like develop new products, with no cash and no ability to borrow more. (Notice that profits can be small or negative but the company can still have cash.) In all three bundles developed, A-G has over $610,000 in cash and a D/E ratio below 1.0. It also has a $1 million line of credit with its bank (stated in the case). In our opinion, therefore, it has sufficient financial resources to implement bundles 1 and 2. Because bundle 3 might require even more capital investment, we believe the company should seek additional equity investment should that bundle be chosen.

1. **Which is the best bundle, and which criteria make sense to use in the assessment?**

To think through these options and decide which one is best, construct a Criteria Matrix such as the one shown in Table IM8. The 5-6 criteria used should reflect your best notion of what “success” means to the company; using more criteria runs the risk of guaranteeing that an alternative that does well on some will do badly on others (like having too many objectives with some becoming “conflicting” objectives). The choice of criteria obviously affects which bundle will “win,” and that is the idea. The Criteria Matrix simply helps the analyst (or CEO or student) develop arguments that will be persuasive for the preferred bundle. The ratings in the matrix are on a scale of 1 to +10, 10 being best for positivelycorrelated criteria, marked P in the table, or on a scale of -1 to -10, -1 being best for negatively correlated criteria, marked N.[[10]](#footnote-10)

The preferred bundle should “win” by at least three points. If you, the reader, think that we should have used different criteria, different ratings, and ended up with a different preferred alternative, then you have understood what this is all about. If all the bundles are good ones, then any of them could end up as the preferred one (it will be doable and lead to success). In fact, we tell our students that “there is no right answer,” that choosing any bundle is OK so long as the argument is persuasive. The absolute numbers in the Matrix are not nearly as important as the relative ratings, i.e., the ratings when compared to each other for each criterion. For example, the maximum rating on “P” lines could have been “10” and on the “N” ratings “-10;” it’s not the absolute totals that count, but rather the relative totals. And these ratings and totals are merely a “first step”—an ability to analyze the alternatives against several criteria on paper—to developing a persuasive argument in defense of your preferred choice. By the way, with more than two alternatives, choose reasons that are superlatives (“best” for selecting the preferred choice and “worst” as a reason to reject).

**Table IM8–Criteria Matrix for Auto-Graphics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criteria** | **P/N** | **1. Aggressively Pursue sales in Canada** | **2. Pursue ILS migrations with a California Focus** | **3. Diversify into the enterprise market** |
| Revenue growth | P | 9 | **9** | *7* |
| Profitability | P | 9 | **9** | *7* |
| Capital investment required | N | -7 | **-5** | *-9* |
| Likelihood of sustaining customer service | P | 9 | **9** | *8* |
| Fit with company culture | P | *8* | **9** | 9 |
| Riskiness | N | -7 | **-6** | -9 |
| Totals |  | 21 | 25 | 13 |

Bold figures are reasons to *select* the winning bundle. Italicized figures are reasons to reject the others.

**Table IM9—Positively and Negatively Correlated Criteria**

|  |  |
| --- | --- |
| **Positively Correlated (P)** | **Negatively Correlated (N)** |
| Revenues or revenue growth | Capital investment required |
| Profitability or profit growth | Change in culture required |
| Contribution to shareholder value | Competitive retaliation |
| Return on investment | Time to breakeven |
| Adverse effect on competitors | Overall riskiness |
| Strength of value proposition |  |
| Gaining or extending a competitive advantage |  |
| Increasing its bargaining power |  |

The following briefly explains the ratings assigned in the illustrative Table IM8, and then presents a sample argument in support of the preferred alternative. In this part of the analysis, where the bundles are rated against particular criteria, give students wide latitude, but insist that their final arguments be persuasive(more on this later). The explanations for the ratings are important because, inevitably, you or someone in the class will ask the presenter to explain particular ones. And feel free to disagree with the ratings I use and the rationales for them!

**(a)Revenue growth**

Revenue growth for bundles 1 and 2 are assumed the highest as they fit in with what AG currently does and involve an aggressive push of its products into the Canadian and California markets. Bundle 3’s revenue growth is lowest, because although diversifying might have good revenue growth mainly because this sector is expected to experience growth once the economy picks up, Auto-Graphics would be a newcomer, which will negatively affect revenue growth initially.

**(b) Profitability**

The reasoning here parallels that for revenues. In addition, diversifying will require more capital investment and costs, which lowers expectations for profitability.

**(c) Capital investment required**

Bundles 1 and 3 have the highest expected capital investment. Pursuing sales in Canada includes developing multi-language capability in AGent suite of products, an expensive proposition according to Albert Flores, A-G’s VP of Sales. Diversifying would require the most investment in R&D because A-G would be developing new products for a new market. Bundle 2, pursuing the California market and ILS migrations aggressively, would require the least investment.

**(d) Likelihood of sustaining customer service**

Auto-Graphics knows libraries and librarians very well, and that ability can be sustained as it pursues market-share increases in Canada as well as new library markets in California and the enterprise market.

**(e) Fit with company culture**

Because Auto-Graphics is so innovative, innovating more urgently as in bundle 3 will fit very well with its culture, followed closely by bundle 1, where its ability to forge relationships with new libraries will be culturally compatible. Bundle 2, however, received the highest score since it involves having A-G use its current suite of products to meet the needs of the California market.

**(f) Riskiness**

Bundle 2 is the least risky and the bundle that is closest to what Auto-Graphics is doing now, while bundle 3 would seem the most risky; bundle 1 lies in between.

A good, persuasive argument for a bundle involves two elements: (1) reasons why the chosen bundle is the best bundle (or better than the other in the case of only two bundles), and (2) reasons why the others were rejected (omit when arguing for one of two bundles). Remember, none of the bundles are inherently “bad,” otherwise it should not even have been considered in the first place.

Adding up the ratings in Table IM8 shows that bundle 2—pursuing ILS migrations with a focus on California—is the preferred choice by more than the minimum three points. The argument for the winning bundle might go something like this (note how it is derived faithfully from the Criteria Matrix and that it uses parallel sentences and superlatives):

Auto-Graphics should aggressively pursue ILS migrations with an emphasis on California because it would generate the most revenue growth and profitability, be most likely to sustain good customer service, and be the least risky. Aggressively pursuing sales in Canada was rejected because it fits least with the current corporate culture, while diversifying into the enterprise market was rejected because it would generate the least revenue growth and profitability, require the most capital investment, and be the riskiest.

Notice that the ratings shown in Figure IM8 have several reasons to reject bundle 3 but only one—and a weak one at that—to reject bundle 1. This makes it difficult to reject bundle 1 convincingly. The solution would be to revise some of the ratings to provide more reasons to reject bundle 1. (Who said that the first set of ratings written down were cast in stone or were the “best” ones?)

This is another weak area in student analyses and presentations. They fail to use the argument to persuade, given that technically all the bundles proposed are good strategic alternatives for the company. Questions after a student-group presentation reveal that other students in the class were not persuaded by the choice made by the presenting group.

The final two questions below deal with recommendations, and conclude the strategic analysis. In fact, real companies doing strategic planning would, after these recommendations, engage in operational and budget planning, a critical step before actually implementing the chosen strategic bundle. However, in our courses on strategic planning, we end the analysis with short- and long-run recommendations (next year and three years hence, respectively). The main reason is the lack of specific information in a case about a company that is essential to do detailed operational planning and insufficient time in a typical class session.

Recommendations contain objectives (measurable targets to be achieved within a certain timeframe—of course, these numbers are really guesses, but so long as they are reasonable in the circumstances, they are OK), strategic intent (concerning market share or position), programs (to achieve the objectives and realize the strategic bundle, taken in large part from the bundle itself), and a trigger-contingency pair—what might go wrong to affect revenues or profits (trigger) and what the company might do in that case (contingency). Triggers must be quantitative, and contingencies must be an operational quick fix and cannot recommend shifting to a different bundle or strategy. We ask students for one trigger/contingency pair in each set of recommendations, one based on falling revenues and the other on falling NIAT. (Companies in the real world have many, many triggers and contingencies to counter real and possible eventualities, and those that are prepared in this way, who know what to do if something happens, fare much better than those caught “with their pants down.”) The chosen strategy should *not* be changed until all possible tweaking of the current one has been exhausted (poor execution should be suspected long before admitting that the strategy isn’t working).

1. **What actions would you recommend to Paul Cope for Auto-Graphics in the short run (i.e., next year, 2013)?**

**(a) Objectives**

Increase revenues and NIAT by 10% (Auto-Graphics’ revenues changed by 1.32% between 2010 and 2011 after it changed by a minus 10.3% between 2009 and 2010 and net income changed between 2010 and 2011 by a minus 110% after changing by a minus 696% between 2009 and 2010). These are modest objectives considering A-G’s past financial performance.

**(b) Strategic intent**

Maintain its overall market share in its current segment and increase market share in California.

**(c) Programs**

(c.1) Emphasize A-G’s California roots as well as its 60+ years of industry experience

(c.2) Focus the sales team on California libraries in the PAC segments that are currently in licensing agreements, utilizing non-flagship ILSs, and/or desiring to migrate to a SaaS model

(c.3) Emphasize the cost advantages of AGent Verso SaaS model

(c.4) Create and use focus groups with key public, private, and academic librarians in the targeted group to hone in on their needs

(c.5) Develop an aggressive marketing plan based on focus-group data targeted at focal libraries including email blasts, webinars, etc.

(c.6) Develop a focused promotion strategy that would incentivize target libraries to use AGent Verso suite of products

(c.7) Tightly control costs

(c.8) Continue all current programs

(c.9) Finance through cash and debt

**(d) Trigger-contingency**

If more libraries in California opt for competing products causing revenues to lag projections by 15%, then Auto-Graphics should become more customer-centric (not product-centric) and offer introductory promotions to new customers as well as focus on the cost savings of the SaaS model of its AGent Verso suite of products.

1. **What recommendation would you make to Paul Cope to position Auto-Graphics in the long run (i.e., three years hence, 2015)?**

**(a) Objectives**

Increase revenues and NIAT by 15%/year (growth in California should be higher and the economy should have lifted most of the current budget restrictions) driven by revenue growth and tight control on costs

**(b) Strategic intent**

Maintain market share in its current segment and increase California market share

**(c)Programs**

(c.1) Continue to emphasize A-G’s California roots as well as its 60+ years of industry experience

(c.2) Continue to focus the sales team on California libraries in the PAC segments that are currently in licensing agreements, utilizing non-flagship ILSs, and/or desiring to migrate to a SaaS model

(c.3) Continue to emphasize the cost advantages of AGent Verso SaaS model

(c.4) Continue to implement and fine-tune an aggressive marketing plan targeted at focal libraries including email blasts, webinars, etc.

(c.5) Tightly control costs

(c.6) Continue all current programs

(c.7) Finance through cash and debt

**(d) Trigger-contingency**

If marketing costs increase causing NIAT to lag projections by 15%, then Auto-Graphics should re-set its marketing budget and control marketing costs, trying to use referrals more.

**A word about uncertainty in decision-making**

Students will soon come to realize that they don’t have the information they need to make good (sure) decisions and that much of the information they do have is not useful. What to do? The answer is to get used to it, because the world continues to change ever more rapidly and our ability to grasp those changes and their implications becomes ever weaker.

In the real world, as corporate managers struggle with making both strategic and operational decisions, they do try to get more information if it doesn’t cost too much and if it can be obtained in time to help with particular decisions. A good example is buying an economic report from a trusted source that provides a basis for economic forecasts rather than guessing. Another example is designing and building a system to provide up-to-date inventory and sales information in order to control costs better and forecast sales as preludes to more onerous strategic decisions. In instances where additional data or information cannot be acquired, managers must make educated guesses and argue among themselves which decision might be best and why. Sound familiar?

Because strategic decisions require so much information external to the company as well as how things play out in the future, those kinds of data are difficult to get. Case writers cannot get all necessary information and, even if they could, the case would become too long and would require too much time to read and analyze. This is why there is just enough data in a case. However, in my opinion, not having all the data one needs not only simulates the real world, but also gives students practice in how to cope with insufficient data—or make decisions under uncertainty—and hence learn what it feels like to be a manager. While arguing for a point of view or particular rating is difficult to do without confirming data, the experience gained is priceless. Instructors should constantly encourage students to defend their decisions (or be persuaded by others with better arguments), which is hard, because students have to think. Richard Rumelt hit the nail on the head when he said, “the most common reasons for so much bad strategy include actively avoiding the hard work of crafting a good strategy and the pain that accompanies making hard choices.”[[11]](#footnote-11)

Even Paul Cope, as current as he is with industry and technology trends in the industry, doesn’t have all the information he needs to make decisions. The IM cites the 60+ years of experience in the industry, which translates into an intuitive feel for the right decisions that most others simply wouldn’t have. This is not to say that he couldn’t be wrong. But no doubt he and his top managers would present arguments and counterarguments to each other until they were all persuaded that a particular course of action or decision was the best one in the circumstance. Again, the experience students would get working this case is as close as one could get to a manager’s real experience in making strategic decisions.

**Epilogue**

Agent Information Software, Inc. (AIS) was established to act as a parent company to A-G and to any entity that may be created to serve other industries and markets.[[12]](#footnote-12) A-G Canada remained a subsidiary of A-G. AIS listed its stock under the symbol “AIFS” on Market Watch.[[13]](#footnote-13) As part of the reorganization, A-G shares were exchanged one-for-one for AIS shares (ticker symbol AIFS). [[14]](#footnote-14) AIS share price as of second quarter 2011 was $0.32 with a $0.75 to $0.30 52-week high/low.[[15]](#footnote-15) Paul Cope’s family and friends own 70% of the company’s interest. AIS continued to invest in software development for the AGent suite of products and experienced additional SaaS sales to large, complex public-library systems.

In an attempt to enter new markets to grow revenues and profits, A-G founded AgentLegal in 2010. AgentLegal is now part of the AIS group of companies. AgentLegal provides electronic-resource-and-research-management solutions through the SaaS model to firms in multiple industries including library, legal, financial, publishing, aerospace, and manufacturing.[[16]](#footnote-16) AgentLegal is currently running multi-site pilots, working with law firms, and conducting webinars in order to fully understand the needs of the markets. It plans to have initial sales beginning in Q2 2012.[[17]](#footnote-17)

In 2012, A-G made a commitment to remain in the bibliographic-records market. It is still working on a plan to eliminate the losses stemming from the defection of libraries from subscriptions to MARCit records and to diversify A-G Canada’s revenue stream. It did pursue a flat pricing strategy in Canada (as opposed to differential pricing based on a library’s size) and saw its 20% losses annually decline to 2%. Its revenue stream from MARCit also stabilized. However, libraries were still defecting from the product category and the losses have continued to mount. A-G is considering bundling MARCit with AGent VERSO for its North American clients.

1. The strategic analysis described in the rest of this note is based on the book by Stanley C. Abraham (2012), *Strategic Planning: A Practical Guide for Competitive Success,* 2nd edition, Emerald Group Publishing Ltd., United Kingdom. The text and the software that purchasers can access on a secure website help students to do this kind of strategic analysis. However, if the analytic tools are taught early on in the course, students can apply them without the instructor having prescribed this book and associated software as a class text. [↑](#footnote-ref-1)
2. In fact, the full name of Porter’s Five-Forces Model is Porter’s *Five-Forces Model of Competitive Threats*. That model indicates five sources of competitive threat: other rivals in the industry, substitutes, new entrants, buyers that vertically integrate backwards by making what you produce or bypassing you and buying directly from your suppliers, and suppliers that vertically integrate forwards by making what you do and competing directly with you or bypassing you by supplying your buyers directly. [↑](#footnote-ref-2)
3. Stanley C. Abraham (2012), op. cit., 221-222. [↑](#footnote-ref-3)
4. The scale of 1-10 is arbitrary, but one that students find easy to use. Deciding on a quantitative rating, while subjective, promotes challenges, arguments, and critical thinking, precisely what is required in a course in strategic management. Without using relative ratings and rankings, students’ discussions tend to be vague and rambling. [↑](#footnote-ref-4)
5. The reason why this list might not be identical to CSFs is that these factors form the basis of *the* company’s competitive strength in the industry, whereas CSFs are just things a company must do well to succeed in the industry (and attach to the *industry*). Yes, this is confusing, but that is why the lists are similar but not necessarily identical. [↑](#footnote-ref-5)
6. Stanley C. Abraham, (2012), *Strategic Planning: A Practical Guide for Competitive Success,* 2nd edition, Emerald Group Publishing Ltd., United Kingdom. [↑](#footnote-ref-6)
7. If you know the answer to the question, it’s not a strategic issue (e.g., should Auto-Graphics continue to offer superlative customer service?); there has to be an element of ambiguity and uncertainty that the subsequent strategic choices will resolve. [↑](#footnote-ref-7)
8. Bundle labels that start with a verb are particularly effective (applies also to bullets). [↑](#footnote-ref-8)
9. Maintaining market share means growing sales at the same rate as the industry, while increasing market share means growing faster than the industry. [↑](#footnote-ref-9)
10. If a bundle manifests more of a criterion, and it were deemed “good,” then that criterion is positively correlated, e.g., if a bundle is capable of producing more revenue growth, that would be good, so “revenue growth” is *positively* correlated. Conversely, if a bundle manifesting more of a criterion is deemed “bad,” then that criterion is negatively correlated, e.g., if a bundle is deemed more risky, that would be bad, so “riskiness” is negatively correlated. More profitability is “good,” so *positively* correlated; more capital investment required is “bad,” so *negatively* correlated. See Table IM9 for examples of positively and negatively correlated criteria. [↑](#footnote-ref-10)
11. As cited in Stan Abraham (2012), “The Strategist’s Bookshelf: Crafting good strategy is hard work and involves tough choices,” book review of Richard P. Rumelt, Good Strategy/Bad Strategy: The Difference and Why It Matters (Crown Publishers, 2011), in *Strategy & Leadership,* Vol. 40 No. 1, 45-48. [↑](#footnote-ref-11)
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