Imprimante S.A.
Cross-Border Valuation and Parity Conditions

On June 23, 2008, a Monday morning, Martin Arnaud arrived at his office in Imprimante S.A. corporate headquarters in Paris, France. The previous week, Arnaud had requested additional financial information about an investment proposal from Imprimante-Mexico, a wholly owned subsidiary that operated a manufacturing facility and a regional sales office in Monterrey, Mexico. The information had arrived late Friday—too late for Arnaud to analyze—and was waiting for him Monday morning. As a financial analyst for a global manufacturer for printing an imaging equipment, Arnaud examined many cross-border projects, particularly since Imprimante had accelerated it move into emerging markets several years earlier.

The Mexican investment proposal called for the purchase and installation of new automated machinery to recycle and remanufacture toner and printer cartridges. Cartridge recycling had become an important part of Imprimante's business in many markets and promised continued growth. Many office product retailers operated formal toner cartridge recycling programs, for both the environmental benefits of keeping materials out of landfills and demonstrated cost savings for their customers. Writing in a leading trade journal, one analyst predicted, "We are going to see more and more refined approached to recycling and remanufacturing (cartridges) in the coming months and years…Both corporate and individual consumers are becoming habituated to it. They have simply come to expect recycling as an option, even for smaller cartridges at lower price points."

Imprimante's Monterrey plant began its cartridge recycling program in 2005. The plant's recycling process consisted of a sequence of operations carried out almost entirely by hand, with the help of hand tools and a simple machine. The investment proposal called for replacing this process with new automated machinery from Germany that cost an estimated MXP3.5 million (approximately EUR220,000) fully installed. As described in the project summary, Imprimante-Mexico expected to realize substantial savings in labor and materials almost immediately. Though the proposed expenditure was relatively small, Imprimante required a discounted cash flow analysis for all such investments in it newer foreign markets and a review by corporate headquarters in Paris. Arnaud was assigned to perform an analysis of the investment proposal and make an "up or down" recommendation to his superior by Wednesday morning.

Imprimante S.A.

Imprimante was a global manufacturer of printers, copiers, fax machines, and other document production equipment. The company also provided consulting and document outsourcing services, with after-sales service contracts constituting about 18% of overall revenue. Company sales for 2008 were projected to be EUR3.35billion, down from 2007 due to global recession. Operating profit was expected to be EUR61.2million in 2008, and the company projected a small net loss for the year. Exhibit 1 presents selected consolidated financial data for Imprimante.

Imprimante's low profitability was typical of the industry in 2008; all of its competitors were similarly affected by the recession. One bright spot in the company's outlook, however, was its growth in several emerging markets, including the so-called BRIC economies of Brazil, Russia, India, and China. Imprimante had been a global firm for years, but did not move aggressively into emerging markets until 2003-04. This was later than some of its competitors. On one hand, this meant Imprimante's market hare lagged in some markets. On the other hand, Imprimante avoided some of its competitors' earlier mistakes.

The company's international operations were conducted primarily through a large network of subsidiaries, which operated mostly medium-sized regional factories in which printers, copiers, and other products were manufactured to suit local tasted. Imprimante conducted business in 28 countries around the world, with operations consisting of manufacturing facilities, small research labs, as well as sales and marketing subsidiaries. In 2008, subsidiaries outside the European Union recorded about half of Imprimante's sales and generated slightly less than 40% of pretax income.

Imprimante competed in a relatively mature market, and its chief competitors were both established multinational companies—some of which had developed their consulting and other after-sales services businesses to a higher level than had Imprimante—as well as smaller players serving niche markets. While Imprimante marketed and sold its products across the full spectrum of industries, it had enjoyed particular success in financial services, health care, and government sectors.

Operations in Monterrey: Imprimante-Mexico

According to Imprimante's CEO Alain Belmont, "We were attracted to Mexico for the same reason we built operations in Brazil and other emerging markets. We wanted to diversify our operations and believed we needed to establish a strong presence in places besides Europe and the United States." He added: "Certainly there is risk (in these countries), but their economies are dynamic and Imprimante must be present. You can see our competitors feel the same way."

A key characteristic of Imprimante's printing and imaging products was their durability, which Imprimante's executives felt conveyed a competitive advantage in emerging economies where Imprimante positioned equipment as offering a lower total cost of ownership. In particular, the company's marketing material claimed a working life of 10 months longer than its closest competitor, with 30% lower service costs. CEO Belmont observed: "We demonstrate to our customers that we have a local presence and we are the lowest total-cost provider. This creates loyalty and solid market positions in Mexico and other of our newer markets."

The manufacturing facility in Monterrey was located near a small research and design facility, also owned by Imprimante. While many product specifications for Imprimante's equipment were formulated at the corporate offices in Paris, France, it was customary for regional subsidiaries to conduct fine-tuning research and design activity to tailor the product more closely to local consumers' preferences. Thus, it was common for a popular printer or fax machine whose basic design was conceived in Paris to be "localized" for size, color, weight, and/or range of features by local design staff. Most of the products produced in the Monterrey plant were sold in Mexico and were distributed through large office-product retailers, department stores, as well as small specialty shops. Manufacturing inputs were source locally, and virtually all of the plant's employees were Mexican citizens.

In the summer of 2008 gross output at Imprimante-Mexico was running at only about 80% of planned capacity. Nevertheless, plant records indicated that there was a sizable increase in demand for recycled printer and toner cartridges.. Imprimante-Mexico's *Programa de Reciclaje de Cartuchos* (Cartridge Recycling Program) was started in 2005 to provide low-cost recycling services to all its distributors and customers. Under the terms of users' service contracts, when cartridges reached the end of their useful lives, the could be returned to the Imprimante facility in exchange for a significant discount on the purchase of a like number of new cartridges. Imprimante pledged to recycle and remanufacture all returned toner and printer cartridges. Imprimante-Mexico also had voiced its support for political efforts to pass legislation that would mandate recycling of printing cartridges used by most Mexican businesses and government offices. In 2009, the company planned to launch a pilot program to recycle selected competitors' cartridges.

As the number of cartridges returned for recycling increased, Imprimante-Mexico management needed to hire and train more employees to carry out the hole-piercing, drilling, vacuuming, and toner/ink evacuation required to recycle cartridges. "It's taking more and more of my payroll to handle recycling," said Beatrice Ernesto, the Monterrey plant manager. "We're happy to see the cartridges coming back in, but the extra volume will become a problem when other operation return to full capacity."

Cost Savings from the Proposed New Equipment

The new equipment could process the Monterrey plant's projected volume using four employees rather than ten, resulting in savings of both direct labor and training costs. Under very favorable circumstances, only three workers would be required. It would also eliminate some human error, which currently resulted in cracked or damaged cartridges which had to be destroyed rather than reused. The new equipment would occupy significantly less space in Monterrey's over-crowded plant; this space would be freed up for other productive uses. It would also require only minimal maintenance expenditures compared to the equipment it replaced, and no significant change in working capital. Exhibit 2 compares projected operating data for the existing recycling process and the proposed automated process, assuming future Mexican inflation of 7% per year.

The new equipment would have a useful life of 10 years and would be depreciated under the straight-line method for both tax and financial reporting purposes. Salvage value was likely to equal disposal costs at the end of the useful life. The manual equipment being replaced was very simple and, properly maintained, would last many more years. In June 2008 it had a book value and tax basis of MXP250,000 and three years of straight-line depreciation remaining. However, its market value was thought to be lower, at about MXP 175,000. After considering Imprimante's consolidated tax position, Arnaud determined that his analysis would use Mexico's federal corporate tax rate of 35%.

Real GDP growth in Mexico was 4.2% in 2004—the year in which Imprimante built is Monterrey plant. By 2006, Mexico's real GDP growth had risen to 5.1%, but subsequently dropped substantially as global recession arrived. Other macroeconomic data in Mexico, including bond yields, bank lending rates, and the consumer price index exhibited similar patterns in recent years. Exhibit 3 shows selected macroeconomic and financial market data for Mexico.

Arnaud had yet to decide whether to perform the discounted cash flow analysis in euros or pesos, or indeed, whether NPV would be affected by the choice of currency. Imprimante's euro hurdle rate for such a project, if undertaken in France, would be 8%. However, borrowing costs in France and Mexico were clearly different: French banks' prime rate for euro loans was 4.99%, while the rate in Mexico on short-term peso loans was about 8.10%. Longer-term peso-denominated corporate bonds were yielding 9.21%, compared with long-term euro-denominated corporate issues at 4.75%. The spot exchange rate on June 23 was MXP15.99/EUR. Many analysts were on record predicting a real depreciation of the peso against both the USD and the EUR over the next five years. For example, one international business publication noted "(Mexico's) rising external financing requirement and the fading impact of the US stimulus package can only increase pressure on Mexico's currency." The article went on to forecast a rise in the MXP/EUR rate to 20.00 by 2011 and upwards of 25.00 in 2013-18. Selected macroeconomic and financial market data for France are presented in Exhibit 4.

Exhibit 1 - Imprimante SA - Selected Consolidated Financial Data (millions of EUR, except as noted)

	2008	2007	2006	2005	2004
Sales	3,345.3	3,561.8	3,576.9	3,078.9	3,050.3
Operating income	61.2	189.2	172.9	163.5	149.9
Net income	(0.7)	85.7	61.2	88.2	85.7
Total assets	2,809.3	2,764.9	2,899.6	3,129.0	2,445.5
Total debt	660.6	616.0	613.0	578.4	504.2
Equity	782.6	819.5	829.7	941.0	865.1
Capital expenditures	87.6	100.0	95.1	240.9	234.1
Depreciation	195.0	209.4	214.0	152.9	155.0
R&D expenditures	17.5	20.0	19.0	48.2	46.8
Earnings/share (euros)	(0.0)	1.0	0.7	1.1	1.0
Dividend/share (euros)	0.7	0.7	0.7	0.7	0.7
Return on sales (%)	0.0%	2.4%	1.7%	2.9%	2.8%
Return on equity (%)	-0.1%	10.5%	7.4%	9.4%	9.9%

Exhibit 2 - Comparison of Projected Operating Data for Different Recycling Processes (thousands of MXP, except as noted)
Assumes 7% Inflation in Mexico   Tax Rate: 0.35

	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Projected Operating Costs, Manual Process										
Unit volume (000s)	496	546	600	660	660	660	660	660	660	660
Materials	564,816	664,788	782,456	920,951	985,417	1,054,396	1,128,204	1,207,178	1,291,681	1,382,099
Direct Labor	1,115,184	1,312,572	1,544,897	1,818,343	1,945,627	2,081,821	2,227,549	2,383,477	2,550,321	2,728,843
Overhead	1,680,000	1,797,600	1,923,432	2,058,072	2,202,137	2,356,287	2,521,227	2,697,713	2,886,553	3,088,611
Total	3,360,000	3,774,960	4,250,785	4,797,366	5,133,181	5,492,504	5,876,980	6,288,368	6,728,555	7,199,553
Materials/unit	1.1387	1.2176	1.3041	1.3954	1.4931	1.5976	1.7094	1.8291	1.9571	2.0941
Direct labor/unit	2.2484	2.4040	2.5748	2.7551	2.9479	3.1543	3.3751	3.6113	3.8641	4.1346
Projected Operating Costs, New Automatic Process										
Unit volume (000s)	496	546	600	660	660	660	660	660	660	660
Materials	542,223	638,197	751,158	884,113	946,001	1,012,221	1,083,076	1,158,891	1,240,014	1,326,815
Direct Labor	524,136	616,909	726,101	854,621	914,445	978,456	1,046,948	1,120,234	1,198,651	1,282,556
Overhead	1,566,211	1,675,846	1,793,155	1,918,676	2,052,983	2,196,691	2,350,460	2,514,993	2,691,042	2,879,415
Total	2,632,570	2,930,952	3,270,414	3,657,410	3,913,429	4,187,368	4,480,484	4,794,118	5,129,707	5,488,786
Materials/unit	1.0932	1.1689	1.2519	1.3396	1.4333	1.5337	1.6410	1.7559	1.8788	2.0103
Direct labor/unit	1.0567	1.1299	1.2102	1.2949	1.3855	1.4825	1.5863	1.6973	1.8161	1.9433

Exhibit 3 - Selected Macroeconomic and Financial Market Data for Mexico

Year	Consumer Price Inflation (%)	Real GDP Growth (%)	Year-end Spot Exchange Rate (MXP/EUR)
2000	9.5%	6.6%	9.4
2001	6.4%	-0.3%	9.5
2002	5.0%	0.9%	10.4
2003	4.3%	1.4%	12.9
2004	4.7%	4.2%	15.3
2005	3.3%	3.2%	13.3
2006	4.1%	5.1%	14.4
2007	3.8%	3.3%	16.2

Source: Mexico Country Reports, EIU

Date	Short-term Bank Lending Rate	JPMorgan Mexico 7-10 Year Corporate Bonds	10-year Government Bonds
31-Mar-06	7.78%	8.20%	8.47%
30-Jun-06	7.68%	9.35%	9.06%
30-Sep-06	7.50%	8.22%	8.24%
31-Dec-06	7.60%	7.42%	7.42%
31-Mar-07	7.68%	7.50%	7.58%
30-Jun-07	7.82%	7.68%	7.19%
30-Sep-07	7.77%	7.86%	7.82%
31-Dec-07	8.00%	8.17%	8.08%
31-Mar-08	7.94%	7.42%	7.49%
30-Jun-08	8.10%	9.21%	9.12%

Sources: Bank of Mexico, Thomson Datastream, Global Financial Data

Exhibit 4 - Selected Macroeconomic and Financial Market Data for France

Year	Consumer Price Inflation (%)	Real GDP Growth (%)	Year-end Spot Exchange Rate (MXP/EUR)
2000	1.7%	4.2%	9.4
2001	1.6%	2.1%	9.5
2002	1.9%	1.1%	10.4
2003	2.1%	0.5%	12.9
2004	2.3%	2.3%	15.3
2005	1.7%	1.9%	13.3
2006	1.7%	2.4%	14.4
2007	1.5%	2.3%	16.2

Source: France Country Reports, EIU

Date	Short-term Bank Lending Rate	JPMorgan France 7-10 Year Corporate Bonds	10-year Government Bonds
31-Mar-06	3.08%	3.73%	3.79%
30-Jun-06	3.27%	4.03%	4.08%
30-Sep-06	3.63%	3.69%	3.72%
31-Dec-06	4.07%	3.96%	3.98%
31-Mar-07	4.42%	4.08%	4.11%
30-Jun-07	4.69%	4.60%	4.62%
30-Sep-07	4.91%	4.36%	4.41%
31-Dec-07	5.13%	4.34%	4.42%
31-Mar-08	4.81%	4.00%	4.11%
30-Jun-08	4.99%	4.75%	4.81%

Sources: Thomson Datastream, CEIC, Global Financial Data