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Pictor Limited
New Zealand

Making Diagnostics Accessible to the World (B): Financing the Company

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The case was developed with the cooperation of Pictor Limited solely for educational purposes as a contribution to the project entitled "IPR Strategies for Emerging Enterprises – Capacity Building for Successful Entry to Global Supply Chain," conducted under the auspices of the Asia-Pacific Economic Cooperation (APEC). The case is neither designed nor intended to illustrate the correct or incorrect management of the situation or issues contained in the case.

In 2005 Pictor founder Dr Sarita Kumble started developing a multiplexed miniaturized version of enzyme linked immunoassay (ELISA) technology in the laboratory that she put up in the garage of her suburban home in Auckland, New Zealand. Dr Kumble had enlisted the assistance of her husband, Dr Anand Kumble. The couple provided much of their early work in the company for free, having sought equity from family and friends.

In 2006, the research laboratory operations moved to a leased space in central Auckland. Dr Sarita Kumble had kept a lean organisational structure at Pictor, employing only a scientist and biomedical engineer to help her and her husband.

The Pictor third share issue that arose in early 2009 involved Dr Lee Mathias as both a shareholder and director. Much of the equity raised at this point had been "matched" by development grants from TECHNZ (part of the Foundation for Research, Science and Technology), the research and science development organisation of the New Zealand government (www.frst.govt.nz.com).

As CEO, Dr Sarita Kumble was faced with decisions recognizing the wide ranging uses of the technology and the various business models through which commercialization could take place. With the first contracts due to be signed by the end of 2009, it was apparent that, notwithstanding what Dr Sarita Kumble's decisions would be on what strategy to pursue, a large capital infusion would be required to commercialize the product as soon as possible. The implications of the commercialization strategy and the terms of the capital raised for the business were key to the decision-making process of the company.

Commercialization Alternatives

Pictor technology could be used in the diagnosis of many diseases and the monitoring of the efficacy of some drugs. It could be used in human, animal and food pathology and therefore had a huge range of applications, from individual blood testing, population screening and herd testing to public health food testing.

The commercialization strategy decision had to include alternatives including manufacturing the product in-house, licensing the technology to others, selling the technology outright and entering into joint ventures with diagnostic service providers. Given the wide range of applications and panels which could be developed, Dr Sarita Kumble likewise recognised the need to focus on one or two products and get these to the market as quickly as possible. Hence, the idea of licensing the PictArray® technology to others or even selling the technology outright would have to be set aside in the meantime.

Licensing PictArray® Technology

The Pictor directors took the advice of experts on the licensing of technologies and considered the implications of maintaining product quality, piracy of the technology, the future of the Pictor system once any licensing agreement had run its course, and the challenges in establishing a pricing mechanism based on individual kit

manufacture. The positive side of licensing, however, meant that apart from marketing and legal costs, the capital requirement would be limited.

Selling PictArray® Technology

Selling the technology outright had always been an option for Pictor and would remain an option following the chosen commercialization path. The Pictor directors were faced with some important decisions on when to sell in relation to the business life of the Pictor, to whom to sell in order to ensure that the technology would continue to be applied as originally conceived by Dr Kumble — to address the needs of the growing market of those who did not have access to diagnostics. Most importantly they had to decide on how to establish the price for the Intellectual Asset (IA).

In early 2010 only a small amount of revenue was being obtained by Pictor from actual product sales; therefore, any company valuation would have to be based on expected revenue coming from the application of the technology. The directors were aware that selling too early might not maximise the return for the shareholders and, conversely, holding on to the technology for in-house manufacture would mean facing the risk of not being able to raise enough capital to continue to be in business.

Commercialization Deliberations and Decisions

Based on their known capability to manufacture in late 2009, the need to assure quality of the product, and the decision to focus on two tested panels, the directors deliberated on the following two-pronged strategy:

Strategy 1: Pictor would develop and market test panels, PictArray® Autoimmune panel 1 and the PictArray® Liver panel 1, to clinical diagnostic laboratories. The first test panel, the PictArray® Autoimmune Panel I, was beta tested in India and Sweden. There had already been discussions for an exclusive supplier agreement with a major Indian diagnostic laboratory for 2010 and an agreement in principle had been reached by January 2010.

Strategy 2: Pictor would develop test panels such as the PictArray® Autoimmune panel 2 according to the specifications of Euro-Diagnostica, a Swedish company specializing in the manufacture and distribution of testing reagents for autoimmune diseases. The strategy was to leverage their expertise and marketing capabilities for product sales. The risk associated with bringing a new product to market would be mitigated by working with established players seeking to increase their market share or to enter new markets.

Dr Sarita Kumble believed that this strategy would result in early revenues from product sales and development fees. Pictor would be marketing the technology through targeted customer visits. It intended to conduct presentations in trade shows as well as publish articles in scientific and trade journals.

By January 2010 the directors had confirmed Dr Kumble's decision to manufacture the three panels for human testing only. The directors decided that in the early phase of business commercialization, in-house manufacturing would be the most

likely option to ensure product quality and allow for further product and manufacturing system development.

Estimating the Capital Required for Expansion and Commercialization

Future Production and Associated Manufacturing Costs

At the end of 2009, Pictor had the manufacturing capability to produce 60 test kits per day, which was sufficient to meet the sales demand at that time. However, sales forecasts (Appendix 1) to 2011 indicated target sales of 13,800 kits. This would require an expansion of manufacturing capability and would include the purchase of one more microarrayer and other equipment for the development of the 16-well slide testing format. The total cost of these additional requirements was estimated at NZ$80,000.

The Drs Kumble identified the need for further research and redevelopment of the products, particularly in relation to those contracts requiring customised panels of tests. At the beginning of 2010, this was estimated to cost NZ$180,000, including the cost of consumables and of some contracted services.

Dr Anand Kumble worked with a financial analyst to develop a spreadsheet that reflected all costs associated with production. Accurate costing of the manufacturing process was an important milestone for the Drs Kumble in understanding the structure of their business. The Pictor board recognised the importance of the tool in determining the strategic direction of Pictor.

Human Resource Requirement

An expansion of the human resource likely to be required was also determined. At January 2010, Pictor had four staff working on all aspects of technology development and commercialization. The plan was to hire three additional staff: one for business development, one to strengthen ongoing product R&D, and another as a manufacturing assistant. This brought the total human resource cost to NZ$460,000 per annum.

Operations

Raising financing from local sources would enable Pictor to upscale the manufacturing component of the business locally and in so doing maintain the quality which Dr Sarita Kumble desired. In many instances, manufacturing was outsourced to New Zealand based solely on pricing. However, it was often at the cost of quality. The long-term goal was to ensure that the PictArray® products would be perceived as a quality, low-cost, high-volume business.

The implications of domestic in-house production included the following: a) up-scaling of the human resource production capability; b) expansion of the

manufacturing laboratory capability; and c) increase in the overhead relating to the above-mentioned production capability build-up.

Marketing and Distribution

Dr Sarita Kumble was convinced that establishing the manufacturing base in New Zealand would allow her to manage the production carefully and to tweak the manufacturing system. This would include outsourcing to a local company the manufacture of the 16-well and 96-well slides, including the insertion and gluing of the membrane inside the wells. However, New Zealand was a long way from the rest of the world and while it had an established reputation for clean, green and quality products, its distance from Pictor's market had to be conquered.

The development of offshore marketing and sales capability presented a huge challenge. The Pictor directors sought assistance from their contacts, some of whom were already in place but did not have formal contracts to act as agents for Pictor.

The Drs Kumble had established strong ongoing relations with New Zealand Trade and Enterprise, New Zealand's national economic development agency (www.nzte.govt.nz) and, through the Focus on Health Challenge planned to maximise relationships and contacts in the USA during the May 2010 roadshow (www.nzfocusonhealth.com).

The directors had considered a strategy which they felt would maximise their opportunities to get PictArray® technology to the market in both a timely manner and at the least cost. By April 2010, they were considering partnering with Eurodiagnostica for marketing and distribution of the autoimmune and RA panels in Europe. They knew that while the manufacturing process was not expensive, the cost of marketing their product would have a greater demand for funds.

Investment

With the commercialization strategy confirmed, an information memorandum was prepared, forecasts for manufacturing and sales were developed and presentations were crafted to entice appropriate investors to Pictor (www.pictordx.com).

The directors of Pictor Limited prepared the company to "go to the market", and to raise NZ$1 million to fund the expansion of the manufacturing capability and business development of the company. The international "credit crunch" of 2008-2009 had made investors wary of start-up companies, especially in the biotech sector where many investors had been badly burnt in previous years.

As CEO of Pictor, Dr Sarita Kumble was faced with the challenge of identifying not only equity investors but the type of investors who would understand the technology and its implications for the global market.

The anticipated use of the NZ$1 million raised in the fifth round was:

Item	Estimated Budget ($)
Salaries and Wages	450,000
Capital Expenses	80,000
Business Development, Marketing and Sales	180,000
R&D Expenses (including consumables and contract services)	180,000
Legal	60,000
Facilities (including rent and general expenses)	100,000

Forecasts

The directors of Pictor had determined the amount of capital that they had to raise based on forecasts that showed a conservative sales start as reflected by the two small initial contracts. That would be followed with a sharp rise in sales, especially to India as a result of the negotiations which were underway by the beginning of 2010. The Indian company had indicated an additional order of 1000 kits in 2010, followed by up to 10,000 kits over the following year.

Assessing Alternative Investor Options

The directors had identified potential sources of funds. These included trading banks, merchant banks, venture capital funds, government-linked funds, and government funds.

Making the Project Attractive to Potential Investors

Dr Lee Mathias approached the company's bankers, Westpac, which was prepared to provide a loan to finance capital equipment, including that required for the development of Pictor business. The loan had an interest rate of 7%, a term of three years and had to be secured by the capital equipment. It did not however provide for debt servicing.

Dr Mathias also approached several merchant banks and high net worth individuals. As a company in the early stages of development but well past the angel financing or start-up phase, Pictor was in a difficult situation; the directors found that investors wanted a larger investment and greater control of the company than the directors felt necessary. Likewise, the potential investors were unable to offer the necessary expertise for the international commercialization of a new diagnostics technology.

It soon became clear that specialist investors would have to be identified. They should preferably have a rudimentary understanding of ELISA technology and its wide use in invitro diagnostics. They would need to be open to learning about the impact that a simplified diagnostic system could have on global market growth, and be sympathetic to the concept of making such healthcare technology available to economies previously denied access to diagnostics because of cost.

The directors considered which organisations should be targeted for investment based on their perceived understanding of the technology and its potential to change the global diagnostics paradigm.

Government-Linked Investment Funds

By early 2010, Dr Sarita Kumble was concerned that the timeline for development would not be met. Negotiations with Curekids Ventures as the lead investor were reignited. Discussions had taken place since late 2008 but had not progressed until early 2010. That investment meant that Curekids Ventures (www.curekidsventures.co.nz) would lead K ONE W ONE, a private investment trust, and NZVF (www.nzvif.co.nz), the government-funded venture capital investment fund, in a NZ$750,000 investment. While there was going to be an initial shortfall, Curekids had indicated during negotiations that a further NZ$250,000 tranche could be available the following year, if required by Pictor.

Drs Anand and Sarita Kumble provided all the necessary documentation and undertakings. In the latter part of March 2010, the directors met with Maxine Simmons, CEO, and Roy Austin, Chairman of Curekids Ventures. The proposed terms included ownership by Curekids Ventures of up to 2,500,000 shares at a share price of $NZ.40 which would be sustained, provided 80% of the projected revenues were achieved over the first 18 months of the loan. If not, the penalty was a devaluation to $NZ.32. The proposed ownership being surrended represented 25.2% of the company. The agreement also stated that some decisions, including the sale of the company, would require the approval of the director appointed by the consortium.

Government Support

In addition to the Curekids consortium, Dr Kumble had commenced negotiations with TECHNZ (www.technz.co.nz) for a further and final grant to sustain the research and development aspects of the business. A positive indication was given subject to a final interview and visit from a senior manager scheduled for early May 2010. The grant provided that TECHNZ would match up to $1 million each dollar raised or spent by Pictor for R&D. The directors considered acceptable the grant conditions such as monthly reporting and the meeting of agreed milestones as they had always met their targets in the past.

Impact of Financing Decisions

The Drs Kumble, as founders of the company, recognised the importance of new money. They were aware of the experience of biotech start-up companies whose owners had been reluctant to divest shareholding in return for finance; as a result these companies had foundered. They also knew that obtaining financing from private and government sectors meant that not only would the company's shareholding be diluted but also that a new director representing new investors would be expected.

The existing directors were keen in having an infusion of new blood and ideas into the business and looked forward to moving Pictor forward. It was agreed with the new investors that Dr Mathias would become the Chairman.

With the news from both TECHNZ and Curekids, the Drs Kumble and Dr Mathias set off for a much needed Easter break, reflecting on what other avenues for equity they could have considered — or was the government-linked package the best way to go? The anticipated term sheet would answer that for them. Hopefully, the financial projections that they did would provide them the answer (See the Appendix).

Appendix: Grants, Sales and Contracts

Grant Income:			Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
Current grants	Anticipated balance at 31/ 12/2009													
TBG grant	$130,000	$90,000	$30,000	$30,000	$30,000									
EDG grant	$25,000	$10,000							$10,000					
CureKids	$20,000	$12,000		$4,000		$4,000		$4,000						
Anticipated grants														
TBG grant	$1,000,000	(for 24 months starting May 2010)					$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
EDG grant	$30,000	(for 12 months)												$15,000
Total grant income	$1,205,000		$30,000	$34,000	$30,000	$4,000	$40,000	$44,000	$50,000	$40,000	$40,000	$40,000	$40,000	$55,000

Sales													
	Potential Customers	RLS						RLS+ two additional customers (at rate of ramp up same as Customer 1)					
PictArray Autoimmune Panel I	Number of units (at cost/ kit of $150)	50	100	200	500	500	500	600	800	900	1,500	1,500	1,500
	Total revenue from sales	$7,500	$15,000	$30,000	$75,000	$75,000	$75,000	$90,000	$120,000	$135,000	$225,000	$225,000	$225,000
PictArray Liver Panel I	Potential Customers				One new customer						one additional customer (at rate of ramp up same as Customer 1)		
	Number of units (at cost/ kit of $150)				50	100	200	500	500	500	550	600	700
	Total revenue from sales				$7,500	$15,000	$30,000	$75,000	$75,000	$75,000	$82,500	$90,000	$105,000
PictArray Autoimmune Panel II													
	Potential Customer	EuroDiagnostica											
	Number of units (at cost/ kit of $150)				50	50	150	200	200	200	200	200	200
	Total revenue from sales				$7,500	$7,500	$22,500	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000
Total units sold (manufacturing capability can account for these numbers with an additional machine)		50	100	200	600	650	850	1,300	1,500	1,600	2,250	2,300	2,400
Total revenues from kit sales		$7,500	$15,000	$30,000	$90,000	$97,500	$127,500	$195,000	$225,000	$240,000	$337,500	$345,000	$360,000

Contract Income													
Rheumatic Heart Disease Panel	$25,000				$25,000								
Autoimmune/ Infectious disease Panel						$25,000				$25,000			
(we are talking to a couple of groups about developing a panel to monitor HIV infection and treatment and TNF blocker therapy for RA)													