



CATÓLICA PORTO
BUSINESS SCHOOL

**Business Analytics as a Performance Driver:
An Acquisition Deal at the *WireCo World Group***

Case Study

30.04.2014

Conceição Portela

André Dória

Acknowledgements: Pedro Almeida and Steve Dix, WireCo WorldGroup.

Introduction

In the early '00s *WireCo World Group*, a rope manufacturer founded in 1931 under the former name of Wire Rope Corporation of America, Inc. (WRCA) found itself in a very delicate financial situation and just one step away from bankruptcy. With an important history in a promising industry, the company was under the radar for a possible take-over, which happened to take place in 2007. Its acquirer, a private equity fund called Paine & Partners, designated one of its managers to promote and drive the needed turnaround strategy at WireCo. That manager was Brian Block, the company's current CFO. When Brian joined the company, he felt deeply concerned with the lack of operational data and specific pools of talent to help him run the show. Those needs would prove pivotal to conducting the recovering strategy, particularly taking into account the acquisitive nature of WireCo and all the analytical power that was therefore required (e.g. WireCo acquired CASAR, Wireline Works, and U.S. Reel all in 2007, and in later years acquired Phillystran in 2009, the Portuguese company Oliveira e Sá in 2010, Drumet in 2011, and Lankhorst Euronete in 2012). As a result the sales volume of the company nearly doubled from 2005 (where the volume was about 400 millions) to 2009. In spite of the financial recovery originated from acquisitions, by 2009 the company was not yet on a solid ground. Each acquisition weighted heavily (and negatively) in the company, as the growing group was altogether unable to capture the full potential from the newly acquired companies. The main reason for this was that managers did not share a common vision of the company, and no one had any idea how the business would look like in three months time, due to the several different local information systems and manual consolidation of information.

The key word to addressing the issue was Analytics, which played a crucial role in leveraging the potential of the synergies from the acquisitions that had been followed since 2005. *"Four years ago the company got to a size where analytical capabilities were an absolute must. Different departments of the company, spread over the world, were completely blind."* Said Pedro Almeida, Strategic Planning Manager of WireCo, based in Lankhorst Euronete, Maia, Portugal. This blindness resulted in a poor product portfolio articulation, poor communication between departments (that worsened every time there was a new acquisition), and negligible overall synergy extraction among the existing organizational departments.

WireCo Corporation

WireCo is a leading manufacturer of steel and synthetic rope, specialty wire and engineered products serving a diverse number of markets and customers, through a variety of brands like *Union, Camesa, Casar, Lankhorst, Euronete, Oliveira, or Drumet*, to name just a few. "At

WireCo we focus on support – support for needs to anchor, drill, pull, lift, span, suspend, control, transmit, and move people, equipment and materials”.

WireCo’s product portfolio is divided into three main categories:

- Steel wire Ropes – representing in 2013 a volume of \$607 million and 74% of total sales. This product category includes steel ropes and EM (Electro-magnetic) cables, synthetic ropes, and synthetic yarns. Steel wire ropes represent about 70% of total sales of ropes. (see Exhibit 1 for a representation of a steel rope, and its components)
- Specialty wire – responsible for \$129 million and 16% of sales (in 2013). These are engineered specialty wire products used in industrial end markets (e.g. construction, automobile, music), but about 80% is used internally as a raw material for the production of steel wire ropes and EM cables.
- Engineered products – accounting in the same period for \$86 million and 10% of sales. These are engineered plastic molding from recycled materials used in a variety of industrial, structural and oil and gas applications.

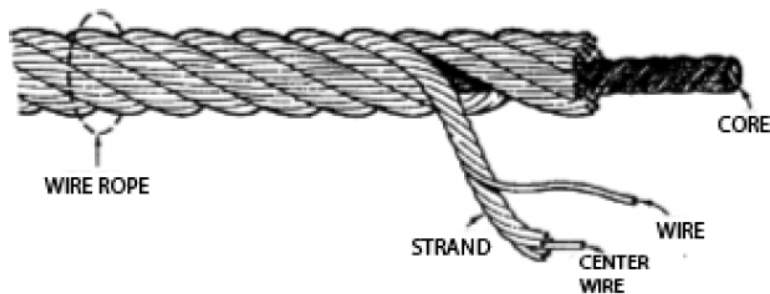


Exhibit 1 - Structure of a wire rope

These products are manufactured in 25 production units, in 11 countries and 4 continents, and distributed throughout a global network of 22 company-owned distribution centers and independent distributors. WireCo employs nearly 4,000 employees, and can produce more than 300,000 tons of steel wire rope and synthetic rope and 425,000 tons of specialty wire, every year. WireCo is vertically integrated, both upstream and downstream. On the upstream it produces the majority of the wire used in its ropes. Owning the wire supply allows the company to have close control over quality, lead-times, enables higher flexibility as well as lower inventory levels (i.e. less cash sitting idle). On the downstream, it controls some of the distribution of its products, which allows WireCo to deliver on time and within shorter lead times.

Steel wire ropes, on the other hand, are categorized according to the end market they serve. The end markets of steel wire ropes are shown in Exhibit 2, together with the importance of each market for the total sales of ropes (as of 2013 values). The Crane and Oil & Gas markets, account together for more than 60% of steel wire rope sales. The Mining market uses ropes in elevators to and from mine-holes as well as in machines that operate in the mines; the Marine market is related to the use of ropes in ships and boats for lifting and anchoring; the fishing market is related to the use of ropes and nets for fishing; the structures market, relates to the use of steel ropes for large infra-structures, such as bridges, stadiums or towers. The Oil and Gas market uses wire ropes for Onshore and Offshore exploration, while the Crane market is related to wire ropes that are used in all sorts of cranes. In the Oil and Gas market, ropes are heavily used and require replacement every 6 to 12 months. In the Crane market, ropes also require replacement every 1 to 4 years of usage.

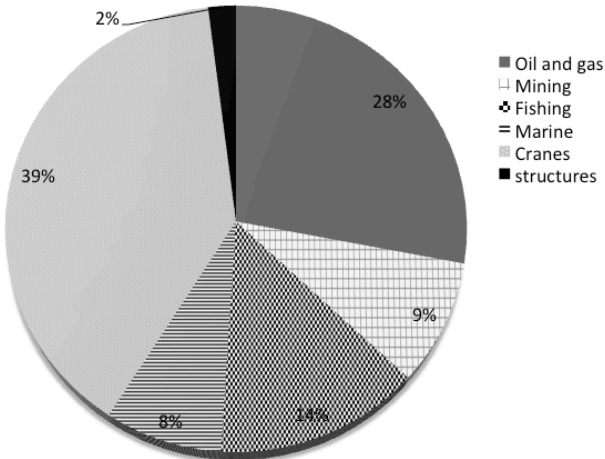


Exhibit 2 - Distribution of rope sales by markets

WireCo and Bridon (its most important competitor) are the only companies in the world that are simultaneously present in all the above markets. The market share (as a percentage of total revenues) of WireCo is about 17% (end 2013) and that of Bridon’s is about 11%. Competitor Kiswire has a higher market share (about 20%), but this company only operates in fishing, marine, offshore and General Purpose rope markets.

Running the Operations before BI

“Without good information people cannot be accountable to make decisions”, Steve Dix (Vice President of Finance) explained, while drawing the pyramid that resumes the process of analytics at WireCo (shown in Exhibit 3).

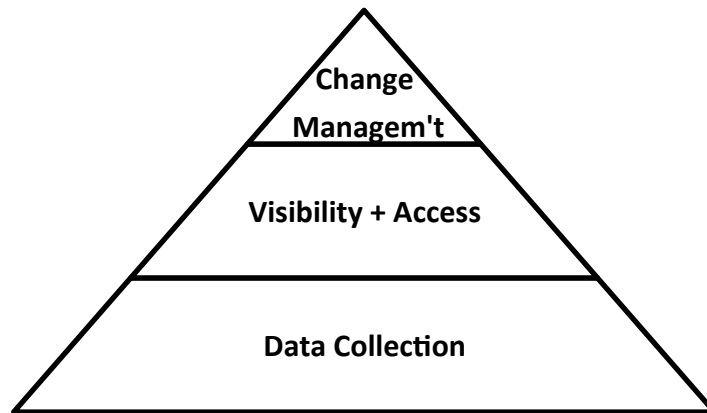


Exhibit 3 - The pyramid for Analytics at WireCo

The first step to entail into an analytics paradigm at a company is to collect data and implement the required mechanisms to do so. Such data should be readily available and visible to all those that need them to make decisions; only after data visibility and access, decisions can be made and changes implemented. Today, the data quality is not a huge problem to the company. *“It was a difficult process to get the data right, but we made it. Every time data problems were encountered we tried to fix the root cause of the problem and the process behind the issue, rather than the data themselves”*.

The first processes at the base of the pyramid are crucial. An accurate data collection process is an indisputable requirement for analytics based management to work. Aware of its multinational size complexities, (its multiple factories and distribution centers serve customers in 122 countries, through 18 sales offices and 175 sales personnel) WireCo has struggled to get the data collection process running without major flaws. This was achieved with a Business Intelligence system through which a data warehouse was created linking the separate ERPs of the various units and then merging the information. After that, the same information is provided to all units of the company (see Exhibit 4 showing the general structure of the data management system at WireCo).

A data warehouse concentrates and links all the information from the various ERPs of the company. The data are then used by two main subsystems: a general access sales platform (Salesforce) and the financial system (Hyperion). The former has actually replaced an older system used by WireCo and extends its Customer Relationship Management (CRM) capabilities with other options (up-right box, Exhibit 4) as well as expansion flexibility. The main and immediate gain from the implementation of the data management system was the time savings accruing from the automation of data gathering processes and the possibility of performing global analytics.

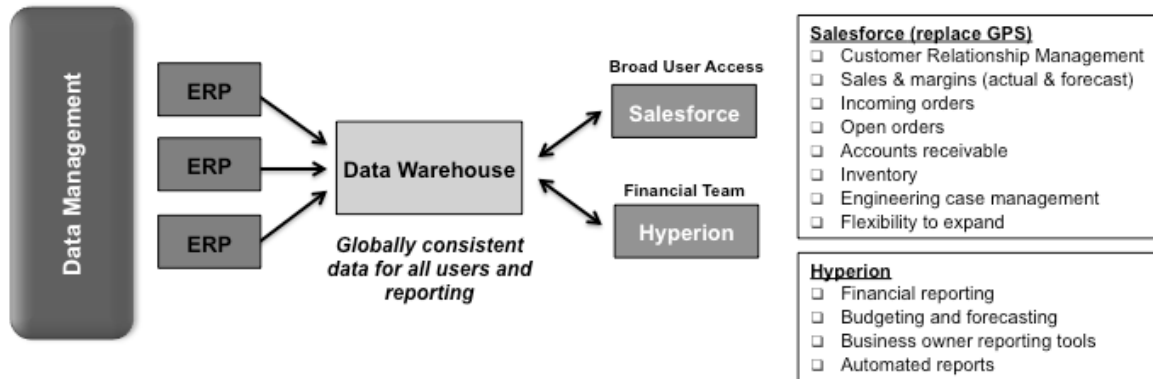


Exhibit 4 - Data Management system at WireCo

Analytics at WireCo play a crucial role at three different levels: Operational, Sales and Corporate. At the corporate level it is important to gain visibility on the overall company performance (what are the plants doing? how do the products impact the business?, how much cash is generated?, how are the next three months going to look like?, etc.). Descriptive analytics of the performance of the corporation at various levels, and predictive analytics of future performance, are therefore the main tools at corporate level.

At the operational level descriptive analytics regarding the performance of plants are very valued by managers. In particular four performance metrics are used: manufacturing variance; scrap, freight (road, sea, air), and inventory.

At the sales level analytics are used to understand sales trends and opportunities through detailed analysis of numbers by product and their contribution to the profit of the company. They are used also with a prescriptive emphasis, for example, for pricing products or generating customer insights.

Given the crucial importance that acquisitions played in the growth and competitive advantage of WireCo, the analytics employed by the company supporting these decisions are worth exploring. This is what follows in the specific example of the acquisition of an European Crane Distribution Center (ECC) that we detail in the next section.

The Crane Business in Europe

As seen in Exhibit 2, the Crane Market is very important for WireCo. It represents 39% of the total sales of steel ropes, and is one of the markets where aftermarket (day-to-day) sales are very important. The structure of this market and its importance for WireCo are synthesized in Exhibit 5.

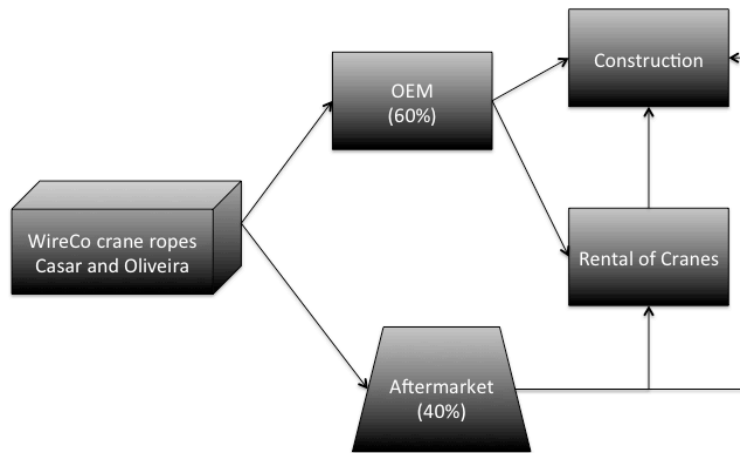


Exhibit 5 - The functioning of the crane market

WireCo crane ropes are produced by two factories, under two brands: *Casar brand* produced in a factory located in Germany and *Oliveira brand*, produced by a factory in Portugal. These factories, supply Original Equipment Manufacturers (OEM) that sell ropes as a component of cranes. The OEMs sell cranes to be used both within the construction industry and to rental companies (this is because some specific cranes used in the construction may be rented rather than acquired). As the ropes used in this market need frequent replacement, the aftermarket corresponds to 40% of the total market of steel wire ropes for cranes.

The sales of WireCo within the crane market can be divided into sales per region as shown in Exhibit 6 (2013 values). Europe represents the most important market with about 50% of sales in the Crane Market, followed by the US with about 28% of sales.

	Sum of sales (tons)	% Sales
Africa	456.87	2.40%
Asia	2589.82	13.63%
Europe	9492.00	49.94%
Middle East	411.63	2.17%
South America	716.61	3.77%
US	5339.28	28.09%
Grand Total	19006.23	

Exhibit 6 - The importance of crane rope sales in each region

The total European crane market was worth approximately \$260 million, and WireCo was getting (by 2013) just about 17% of the total tons of this market. The European Crane market was mainly supplied by factories in Portugal (where there are 6 factories) and Germany

(Oliveira and Casar), and the aftermarket sales were supplied directly from these factories – the distribution centers in Europe did not supply crane ropes.

WireCo's crane market share in Europe has been showing a decline since 2008 as the values in Exhibit 7 illustrate. WireCo suffered an average yearly decline in sales tons of 7.3% since 2008 and a total decline of 10.5 percentage points in the market share. This was counter-cyclical with the competition performance, whose volume of sales was on average increasing at 2.6% per year, and with the market trend, which showed an average annual growth of 0.4%.

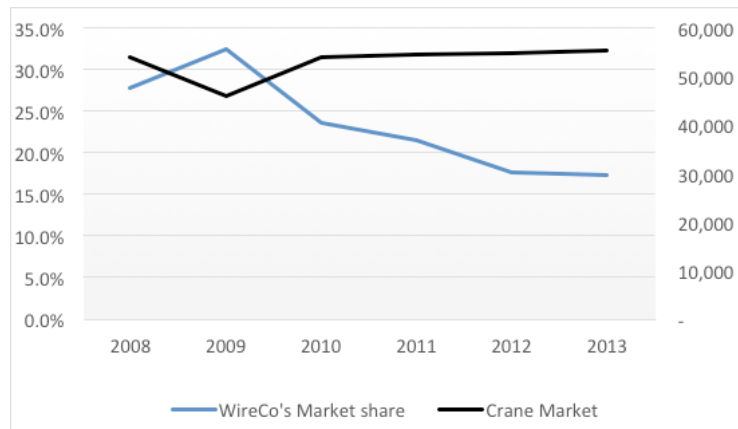


Exhibit 7 - Historical European Sales in Crane Market (WireCo Mkt Share & Total Market tons sold)

The facts behind the share decline were twofold:

- **under stocking** or wrong stock mix at the production centers, which created an important supply / demand unbalance;
- **slow response time** of WireCo in Europe which was unable to serve the **aftermarket demand** at the desirable speed; while in 2009 a 6 month lead time was considered reasonable, today clients expect deliveries within days or weeks.

In a market known to have performance drivers like service, support and delivery times, the above caveats were clearly hindering the growth of WireCo and eventually threatening its survival in the market. It was clear that in order to meet delivery speed (a critical success factor in aftermarket sales) the company needed a distribution center specialized in the crane market in Europe. As such, WireCo's Executive Team asked the Business Analytics group to work together with the Commercial and Operations teams to put together a business case on alternative sites to build such a distribution center and to perform some evaluations on the costs of this alternative.

The way forward came unexpectedly from a distribution company - which distributed mainly crane and maritime ropes - located in the Netherlands, facing financial troubles and looking for a buyer. For that reason, this Dutch company approached WireCo, which immediately launched an evaluation of the various alternatives in order to understand whether the acquisition of this distribution center could be an option.

The acquisition of a Crane Distribution Center

The European Crane distribution center (or ECC onwards) was facing financial problems, showing a negative EBITDA (see Exhibit 8) in the last two years.

<i>in K€</i>	2010	2011	2012	2013E
Sales	10,649 €	13,408 €	9,454 €	8,091 €
Gross Profit	3,564 €	3,819 €	3,008 €	2,419 €
%Sales	33%	28%	32%	30%
SGA *	- 3,239 €	- 3,255 €	- 3,207 €	- 2,870 €
%Sales	30%	24%	34%	35%
EBITDA	325 €	564 €	- 199 €	- 451 €
%Sales	3%	4%	-2%	-6%

Exhibit 8 - ECC P&L pre-acquisition; *Selling, General & Administrative expenses

The acquisition of the ECC appeared a good business for several reasons: (i) It could help reducing WireCo lead times, (ii) bring ECC customers to the company and divert them towards WireCo brands, (iii) help establishing a quicker turnaround to access aftermarket customers, (iv) foster the growth of international clients, given quick accessibility, and (v) help re-focusing the plants in Europe in production leaving all distribution activities to ECC. In addition to these advantages, its financial troubles could be an opportunity for WireCo to buy at a reduced price.

The advantages of acquiring the ECC seemed obvious from the market analysis point of view. The issue was, however, the quantification of the advantages and the analysis of the costs involved.

Building the Decision Model

The next step involved assessing two possible actions: buying ECC or building a new distribution center in Europe. Each alternative needed to be evaluated and the pros and cons well understood for the final decision. This evaluation implied several tools of prescriptive analytics as it was necessary to draw several scenarios regarding the potential change in the global market share, potential change of WireCo's market share, expenses growth, transaction risks, etc.

With this objective in mind, the analytics team selected a number of metrics in order to construct the financial model and assess the value of each possible course of action. Taken the financial nature of the decision, which was about to be conducted, the team elected the financial indicators displayed in Exhibit 9. Such metrics would conveniently aggregate the model output, taking in the operating performance expectations conveyed by the business intelligence parameters and variables.

IRR	Internal Rate of Return provides the discount rate that matches total future cash inputs and the current investment. The company decides on investments based on a threshold of 15% IRR.
NPV	Net present value at a given discount rate: WireCo's cost of capital for this operation will be 10%.
Investment/EBITDA	Capex invested divided by Earnings before Interest, Tax, Depreciation & Amortization (year 2018); How many profit cycles one needs to repay investment. A maximum value of 1.5 for this ratio is desired.

Exhibit 9 - Output Financial Indicators for Buy / Make Decision

Parameters of the evaluation model and assumptions

For the sake of simplicity, details on several items will be omitted from the case. We will also assume, in case the option of the company is to buy the ECC, that it happens in the end of 2013 – and therefore the benefits from the acquisition start making effects in 2014. The planning horizon of interest for the company is 2014-2018 (5 years time).

The main parameters used by the analytic experts at WireCo to evaluate options were the following (which feed the Free Cash Flow template provided in the Appendix):

The European Market is expected to increase by an average growth rate of 1% per year. Some uncertainty is estimated for this growth rate, where 0.5% can be considered a pessimistic estimate and 1.5% an optimistic estimate (a uniform distribution can be used to model the 3 scenarios).

The market share of WireCo in 2013 is 17.2%. Without the acquisition of the ECC the WireCo market share is expected to decrease in at least one percentage point over the 5 years period. The acquisition of ECC by WireCo is expected to have influence on the market share of its 4 main competitors as shown in Exhibit 10. The values in this exhibit represent expected values to

which some degree of uncertainty is associated. The value of 3.7% is the most likely value, but a pessimist estimate is a 0% growth and an optimist estimate is 4% growth.

	Sales (Tons)	Mkt Share	Expected Mkt share	Loss
	2013	2013	2018	2013-2018
Comp1	6,500	11.8%	11.0%	(0.8%)
Comp2	10,500	19.0%	18.3%	(0.7%)
Comp3	5,024	9.1%	8.5%	(0.6%)
Comp4	3,000	5.4%	4.9%	(0.5%)
Other European Competitors	20,640	37.4%	36.3%	(1.1%)
Competitor Total	45,664	82.8%	79.0%	(3.7%)

Exhibit 10 - Sales Build Up from ECC

The average price per ton sold is \$6000 in 2013. This value is expected to be about constant during the period of analysis, assuming no inflation and unchanged price politics.

The gross margin is expected to stay at 40% of sales values: costs are also expected to remain constant during the same period.

Other expenses are linearly expected to increase with the acquisition of ECC from 2.500.000 (2014) to 3.300.000 (2018).

Depreciation: Depreciation (as calculated by WireCo) is indexed to sales at 2%.

The annual discount rate & taxes can be considered at 10% and 20%, respectively.

Cash corrections: In order to get from the Net Income down to the Free Cash Flows cash corrections are taken into consideration:

- Depreciation is not lost cash so it must be added back;
- Maintenance capital will be applied at €100.000 per year
- Changes (from year i to year $i+1$) in Working Capital are divided into three sections:
 $WC = AP - AR - I$

Changes in Accounts Receivable (AR) and Accounts Payable (AP) are assumed to compensate each other during the planning horizon and shall thus be cancelled out. Changes in Inventory, however, are not negligible. If a positive variation occurs, cash was expended. It is expected that during the first year of operational stocks change by +2% of sales value, smoothly reducing to +0.5% by the end of the planning horizon due to actions towards an improvement of inventory turns.

Free Cash Flow: After the adjustments FCFs are obtained. The total investment on year 0 shall be included at this stage and the following years shall reflect the cash flows that, altogether, will be used to compute the NPV and IRR values. At year 2019 a no-growth perpetuity is assumed for representing the company terminal value.

Transaction (Bankruptcy) risk: Further to the assumptions above, the legal due-diligence highlighted a possible upfront risk (to be added to the investment) arising from a possible target bankruptcy, in case the ECC transaction is not effective soon enough. There is a 50-50 chance of bankruptcy happening during the negotiation period. In case it happens WireCo will incur in a \$400.000 loss, necessary to rescue the company from bankruptcy.

Build v. Buy?

A brand new distribution center had a twofold appealing to the management. For one thing, a special purpose building would be crafted at a near perfect location that uniquely served the distribution purposes. The company wouldn't be purchasing a certainly inefficient package of assets which were outdated or needing repair, or write off; moreover, part of the ECC equipment was in fact designed to address a different business which would not benefit the current cranes aftersales issue. On the other hand however, building a new distribution center would delay operations in 1.5 years in regard to the acquisition scenario.

In order to understand the target asset value, either in the already existing items or further needed to meet the operational needs, a list was thoroughly put together for easier comparison (see Exhibit 11).

	Buy	Build
Assets and inventory included in the purchase		
Presses, hoists, cutting stations, tools, power grid station	1293	1837
Additional assets to meet needs of crane center		
Proof loaders, cleaners, storage, etc.	640	1010
Sub-Total	1667	2847
Start up costs		
Recruiting, training, travel, general	200	750
Transaction Fees	77	0
Moving inventory from Germany	100	100
Total	2310	3697

Exhibit 11 - Asset Valuation List (in \$'000)

Pricing the Acquisition

After carefully summarizing all the analytics data and performing the corresponding asset evaluation analysis, WireCo assessed the existing room for targeting a price to which the acquisition of ECC would be possible and advantageous for the company.

First, the board demanded certain KPI thresholds for successful investments with clear limits as in Exhibit 9. An additional, obvious consideration wasn't less critical: the deal should look interesting enough for the client to close, and be fair enough in order to prevent a regulation body's blockade.

In fact, the purchase price would likely amount to a higher value than the simple sum of the target's assets (\$1293K - Exhibit 11), as it included additional value (existing client base, a trained force and other intangible assets). On the other hand the analytics team knew that the lower the purchase offer, the lower the success probability of completing the transaction without a regulators' / targets' management blockade. Therefore, an intuition for that transaction success has been depicted as in Exhibit 12, from which, for example, one estimates that for a purchase price of \$1500k there is a minor 15% probability of closing the deal.

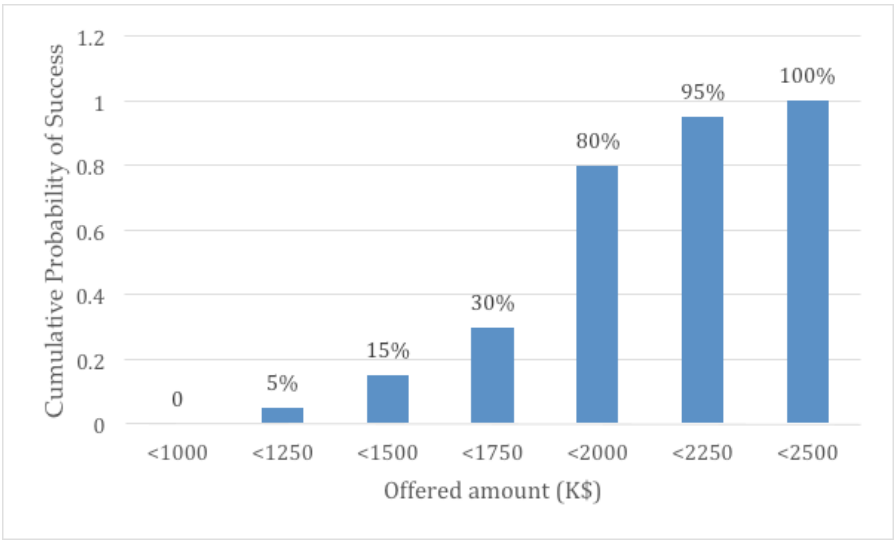


Exhibit 12 - Deal probability of success vs offered amount (K\$)

Assignment questions

1. Discuss the importance of BA for WireCo and think of other examples where Analytics may have played a crucial role.
2. Based on the information provided and guiding your thoughts from an analytics stand point, build the stochastic decision model that guided WireCo in the evaluation of the ECC and its possible purchase (use the template in the Appendix).
3. What would be your designated purchase price for the acquisition, taking note of the presented deal restrictions? What do you think are the main risks of the decision made and where would you say gathering more information is critical (You may want to try *Tornado Charts*)?

APPENDIX

A Template for the Model (*Free Cash Flows*)

Start of operations in beginning of year one (2014). No incremental revenue generated in 2013.

	2014	...
Incremental Sales (from ECC)		
Gross Margin		
Other incremental expenses		
Incremental EBITDA		
Depreciation		
EBIT		
Tax		
Net income		
Cash corrections		
Free Cash Flow		