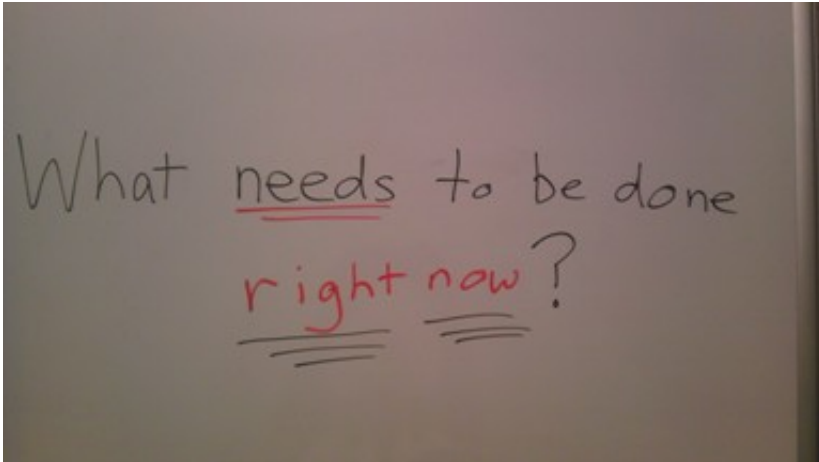


## What needs to be done to create new opportunity for our business, is a question CEO's and senior executives seek answers to.

Answers to these questions cannot be found in data about what has been done so far or how business is normally run. Big-data offers a fresh approach to valuable answers.

3rd October 2013, by: Peter Storm



### **A client story about an executive engagement with a leading global diversified miner.**

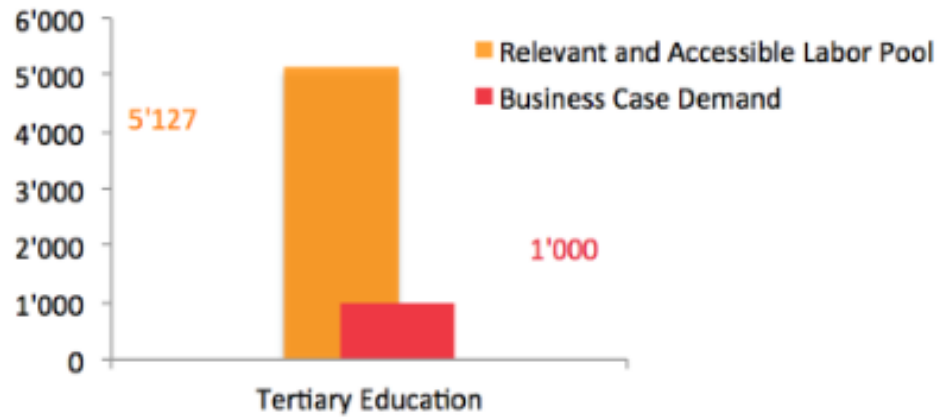
This is a real-life client story about an urgent business dilemma that turned into a huge business opportunities enabled by facts from big-data analysis. The story is a great example how big-data can create unique business insight and opportunity.

The story is about an executive engagement that started with an urgent business dilemma but, could be turned into a huge opportunity for one of the global leading diversified miners. The engagement began with a talent supply dilemma in Africa and evolved to global labour productivity.

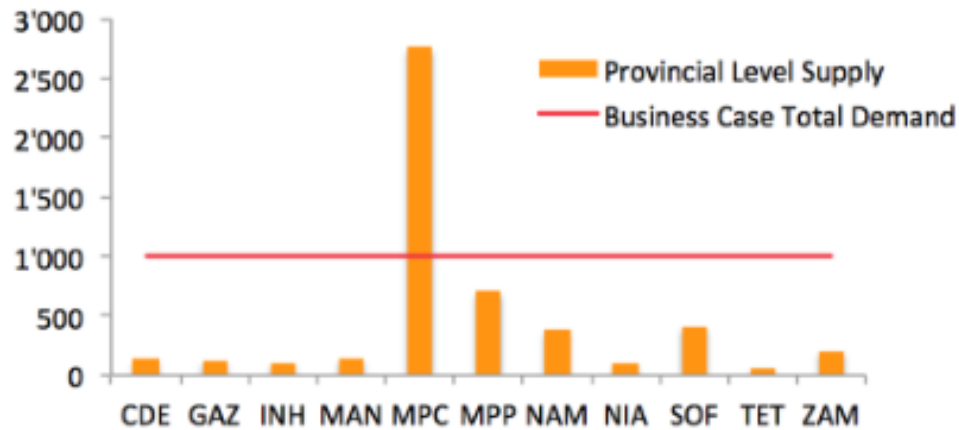
The engagement started with a small project to analyse talent supply and associated human capital risk for a newly acquired mine in Mozambique. Using big-data analysis we identified structural talent demand-supply- and skills gaps. We created a model to proof that the problem would intensify mid-term and cannot be solved with national resourcing alone.

The data revealed that the HR baseline for long-term operations (as per the acquisition business case) was unachievable. Talent demand would require 20% of the relevant and accessible national labour pool with tertiary education. Talent need was in a region far remote from the capital region and our research showed that the company had no or severe limited access to that talent pool.

## Tertiary Education



## Tertiary Education



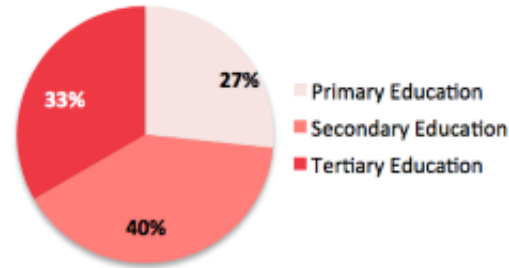
Skills gaps in secondary education also painted a grim picture of sustainable talent supply for the future workforce.

The following charts revealed the structural talent demand-supply gaps of the Mozambican labour market:

**Labour demand (business case)**  
by Education Level

Education Level	
Primary Education	800
Secondary Education	1'200
Tertiary Education	1'000
<b>Total</b>	<b>3'000</b>

Labor Demand Structure - Education Level

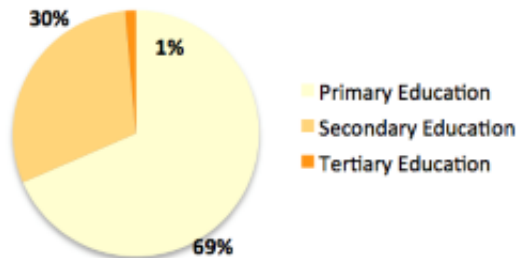


**B. Total market labour Supply Structure by Province and Education Level**

Province	Province Code	Primary Education	Secondary Education	Tertiary Education
Cabo Delgado	CDE	332'334	113'159	2'665
Gaza	GAZ	485'304	98'544	2'510
Inhambane	INH	493'162	100'635	2'169
Manica	MAN	417'334	162'496	2'831
Maputo City	MPC	285'264	566'453	57'558
Maputo Province	MPP	583'476	300'545	14'716
Nampula	NAM	926'107	270'070	8'070
Niassa	NIA	203'081	95'054	2'026
Sofala	SOF	566'577	245'300	8'617
Tete	TET	254'216	147'263	2'141
Zambézia	ZAM	682'872	197'625	4'334
<b>Total</b>		<b>5'229'727</b>	<b>2'297'144</b>	<b>107'636</b>

**Mozambique**

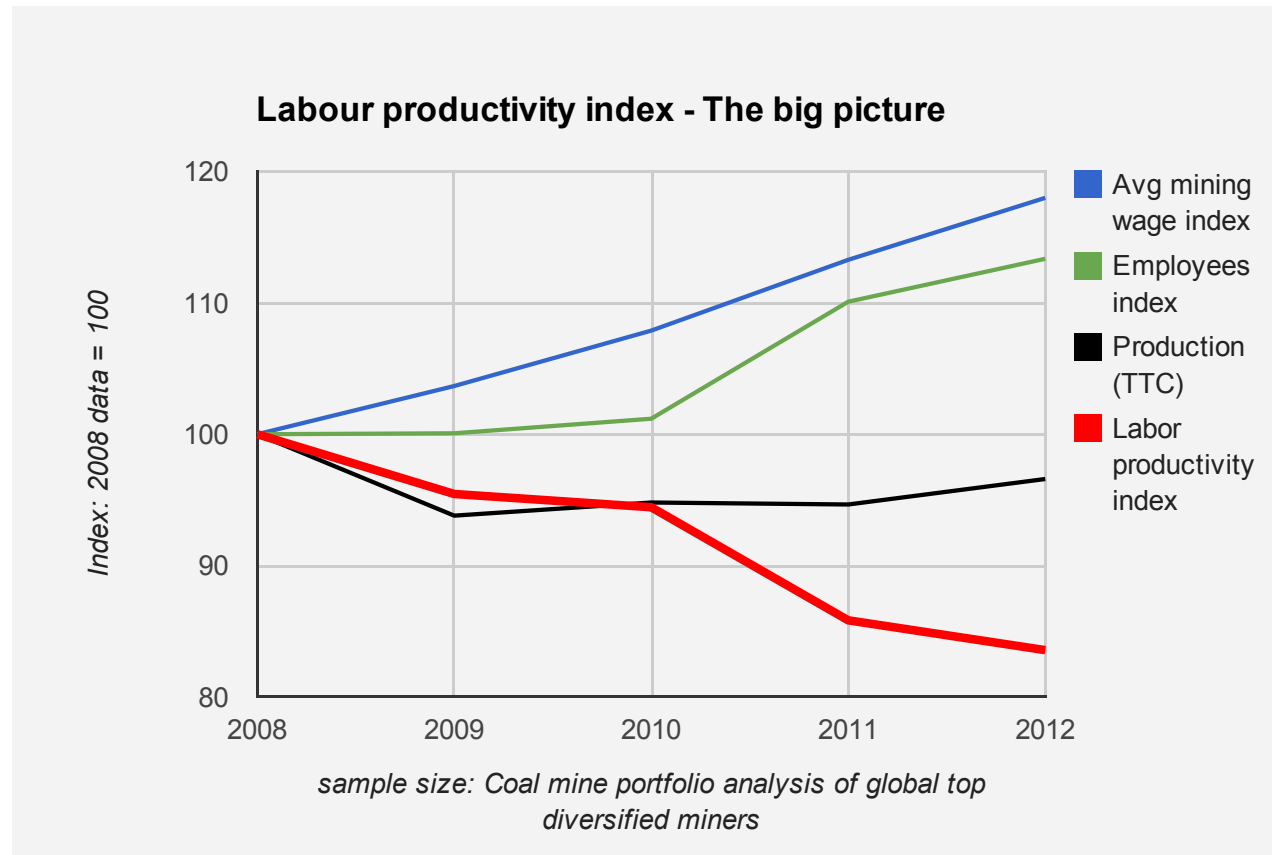
Labor Supply Structure - Education Level



The talent demand-supply and skills gaps conclusion triggered the next big-data analysis assignment; "what is the difference between our labour productivity base-line in Australia

versus a selection of new and leading mining markets?".

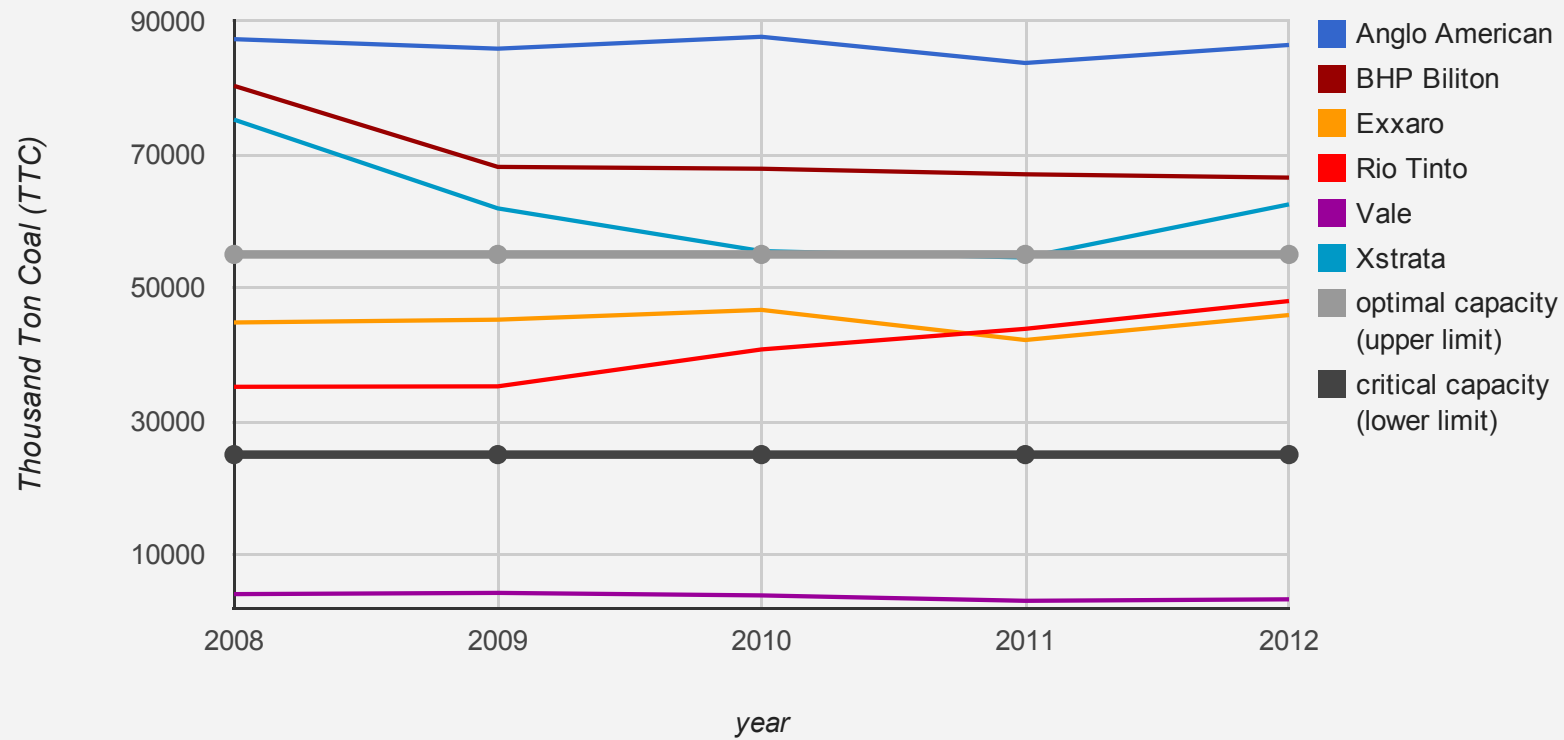
Not only did the analysis provide a precise quantified answer to the question, it also revealed a structural business issue with labour productivity across their operations.



Our labour productivity analysis resulted in a decision to implement productivity management as a dedicated function reporting to the executive team. For the productivity management process we created a mathematical model - the mining model - to improve performance and forecastability of the workforce.

The data also showed that the portfolio size (output) of energy miners has a well defined relation with labour productivity. Size matters with a clear lower size limit of critical capacity, below which labour productivity drops dramatically. This is generally understood. What is more interesting is that we also found an upper bound above which labour productivity starts to drop below that of the optimal output range. We conclude that size matters more precisely than assumed.

### Coal portfolio size in relation to the optimal labour productivity



I hope that by reading this story you think about big-data analysis as what you could do right now for your business.

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