Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Property Lease Management Portfolio – Budget and Forecast (By Property Accounts and Portfolio)

Semi-automated insights and what-if modelling of Trading Outcomes

Problem	Tedious and laborious way of managing the *Property Leases* market
Challenge	1. Tedious way of trying to integrate *SAP* and *Business Warehouse* data 2. Ascertaining a more accurate way of forecasting financial outcomes 3. A more efficient way of integrating multiple lease portfolios 4. No *What-If* modelling capability
Traditional Solution	Purchase of expensive software – Deployment of data-marts
Solution	Apply the Algomatics™ methodology to that brings together *SAP data*, *Business Warehouse data* and operator's personal insights
Outcomes	Integrated *Product* as a one-stop shop for Property Accountants, Lease Managers and the General Manager charged with the Portfolio
Status	Delivered

The detail

Interfacing and integration of *SAP* data, *Business Warehouse* data and *Portfolio Managers* intuitive view of future events. For each property it collects, forecasts and models outcomes using 5 different method

CLEANING
WASTE DISPOSAL
HYGIENE CHEMICALS
GREASE TRAP EXPENSES
CLEANING EXPENSES
EXT TRADING CLEANING EXP
EXT TRADING HRS RECOV-CLEANING
PEST CONTROL
RECOVERABLE CLEANING
ELECTRICITY - AIR CON
GAS - METERED
RECOVERABLE AIR COND. EXPENSE
LIGHT & POWER
RECOVERABLE LIGHT & POWER
SECURITY
SECURITY EXPENSES
RECOVERABLE SECURITY
DIV. ADMIN. FEES PAID - PROPERTIES
RECOVERABLE DIV FEES
ENTERTAINMENT - FBT & TAX DEDN
TRAVELLING EXPENSES NO FBT & TAX DEDN
RECOVERABLE TRAVEL & ENTERTAIN
SUNDRY EXPENSES
PROFESSIONAL DEVELOPMENT
TELECOMMUNICATIONS
STATIONERY
AUDIT - OTHER -E & Y
RECOVERABLE OTHER GEN EXPENSES
BLE GEN EXP
MAINT - MISCELLANEOUS
MAINT ELEC. - GENERAL
MAINT - FIRE EQUIPMENT
MAINT - PLUMBING
MAINT - PAINTING
MAINT - LIFTS/ESCALATORS.
MAINT - AUTO DOORS
BUILDING REPAIRS INTERNAL
BUILDING REPAIRS EXTERNAL
CONTRACT MAINTENANCE
FIRE SERVICES CONTRACT
REPAIRS & MAINTENANCE - MINOR
RECOVERABLE MAINTENANCE
MAINT AIR CONDIT.
MAINT CONTRACTS AIR CONDITIONING
RECOVERABLE AIR COND. MAINT
LAND TAX
RATES
WATER AND SEWERAGE RATES
RECOVERABLE RATES & TAXES
CAR PARK MAINTENANCE
P & G CONTRACTS

In Summary

This product allows the Property Managers to recut and model different outcome and views of the future using various methods and manual interventions based on intuitive views not inherent in models

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Demographic Profiler – The *Real Estate* and *Finance* Industry

Socio-economic intelligence gathering, industry trends and forward projection of the Market place

Problem	Where and when it is best to invest in the *Real Estate* market
Challenge	5. What suburb appears to be a 'safe bet' to invest in? 6. Is it better to invest in houses, apartments, town houses, land? 7. Is *Real Estate* a better 'bet' than blue chip stock or the stock market 8. Impact of inflation, CPI and the interest rate
Traditional Solution	Financial Planners, listening to Real Estate Agents, Developers
Solution	Apply the Algomatics™ methodology to allow a host of future 'what-if' projections based on a solid base of 41 years demographic data, 11 years of Real Estate data on suburbs, 11 years of select *blue chip* data and Indices, as well as Interest, Inflation and CPI data to compare against
Outcomes	What areas in *Real Estate* it would be best to invest in and when it would it have been better to invest. Also it will flag times where it may have been best to invest in *blue chip* stock.
Status	A project team including a *Real Estate* agent has been formed to commercialise this application

The detail

Sourced 41 years of demographic data, 11+ year of *Real Estate* data (For all of Australia), 40 years of CPI, 40+ years of Inflation, 40+ years of Interest Rates as well as 11 years of select *blue chip* stock data. Loan Approval for the construction, renovation, purchase etc. of Real Estate has also been collected. It allows you seek out

1. Best type of investment over a given time period. Going back at least 11 years
2. Best performing suburbs over the last 10 years
3. Best performing type of real estate (based on sales) – be it land, house, unit
4. Provide you with rate of returns for these
5. Compares side by side: Real Estate, Blue Chip, ASX Index, Interest
6. Dynamically graphs these for you side by side for a period of 5 years

In Summary

The product has been identified to be of use for Developers, Builders and Real Estate Agents when either considering investing or selling to their clientele – being able to demonstrate historic trends.

A project team has been formed with the view and intent of commercialising this product.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Start-Up Corporations

Full Operational Model (End-to-End) valuing start-ups

Issue	Understanding and substantiating potential value of start-ups
Challenge	1. Understanding drivers of value and their interaction 2. Quantifying value, risk in both financial and operational terms
Traditional Solution	Consulting firms or Venture Capitalists who charge consulting fees / take %
Solution	Apply the Algomatics™ methodology to allow a host of future projections OR Evaluate evaluations already obtained to assess credibility / conservatism
Outcomes	1. What-If model 2. Interactive with Industry data, demographic data and other models
Status	Built various models: Finance Industry, Technology, Transport

The detail

Sources various industry and government supplied data to provide

1. Valuation on Patents
2. Licenses
3. Company valuation (buy-outs)

End-to-end model built. Not just an accounting driven financial model – but an operational driven finance model. Inspections available on request.

In Summary

Model used for negotiation purposes. Re to below author's credentials as well as international testimonial by various CEOs, Engineers, SMEs, line managers and entrepreneurs:

Master in Applied Finance – Macquarie University
MBA – Edinburgh Business School (Professorial commendation)
Founding Member – Strategic Management Institute (Australia)
Founding Member – Project Management Institute (Melbourne)
PS146 Tier 1 accredited (License MQFAC0026 in 6 Speciality Areas)

Certified Strategy Practitioner (CSP - Fellow) – Strategic Management Institute
Certified Member - USA Project Management Institute (License 079136)
Certified 'Team Leadership' (ODI - Professor Dr. Labovitz Boston University)
Certified 'Quality Action Teams' (ODI - Professor Dr. Labovitz Boston University)

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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The Demographic Profiler

Government Policy Opportunities, Strategic Partnership, Economic Scenarios, Threats

Problem	Understanding the challenges of the Futures – Economically and Socially
Challenge	1. Baby boomers have had an positive economic impact – this is changing 2. Close to zero and negative population growth are plaguing various OECD countries. But, how is Australia positioned?
Traditional Solution	Leave it to the Economists and Consulting firms who charge consulting fees
Solution	Apply the Algomatics™ methodology to allow a host of future projections based on a solid base of 41 years demographic data
Outcomes	1. Used to profile the threats to the *Alcohol Industry* and *Liquor Business* 2. Used to profile the drivers behind the *Real Estate Market*
Status	Resulted in one key project in the *Real Estate* industry

The detail

Sourced 41 years of demographic data. The data was then profiled determining various future states

4. Rate of Births compared to Mortality Rates ➔ Zero, Negative, Positive population growth
5. Rate of growth of various age groups critical for certain economic and commercial outcomes
6. Projections ranging from 1, 2, 3, 5, 10 years out to determine the profile of future population

Various products were then built around it (refer next two case studies) to determine threats and opportunities presented by these demographic drivers

For instance, from an economic perspective – the ratio of *working age population* versus *non-working age population* has collapsed from an 8:1 in 1971 ratio to a 5:1 ratio in 2012

We also see a continuous decrease in a younger work force coming up over the last 5 years. This trend is continuing but it appears to be stabilising supplemented by immigration

Whilst the population is ageing it presents commercial opportunities for a number of industry sectors including partnerships with both federal and state government. There a numerous opportunities to target investment (Real Estate – refer case study below), target marketing (Health and Age Care), and harness market potential (Food and Beverage refer case study below).

In Summary

This tool allows one to dissect any aspect of demographics and hone in on what may be threats or opportunities. Segmentation trends by age and gender are easy to isolate for any given time line. In essence, the product has captured the demographic view of the future – it has 90%+ of the data.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Running a Company and Its Corporate Strategy

Teaching tool built for the *Strategic Management Institute*

Objective	Teaching senior executives the *art* and *science* of strategy – Simulation Run
Challenge	1. Take a company (any industry type), prepare a strategy and execute it 2. Compete against up to nine other companies and the economy 3. Evaluation of all players – using up to 100 matrices
Traditional Solution	Software companies or academic institutions building software
Solution	Apply the Algomatics™ methodology geared to simulate a host of economic variables, company variables including operational challenges
Outcomes	A product allowing 10 players to execute strategies and run companies over a period of 20 quarters – in competition with each other and the economy. Each quarter allows each of each of the participant to review economic variables, market research, competitive research, R&D, industry trends, threats, opportunities….
Status	Completed - plans to launch this year

The detail

To commence, participants will be asked to set up and articulate their *Company Strategy* by detailing *Positioning Strategy, Product Strategy, Sourcing Strategy, Marketing Strategy, Sales Strategy, Logistics Strategy*
To try to emulate as close as is practical the running of a company in line with its strategy, the following modules are built to allow any decision to be played out in the disciplines below:

Market Research	Sizing the market. Decide if, when and who to engage for what product based on track record
R&D	New product launch. Up to 5 products to 'research' with necessary financials / market share
Transformations	Introduction of transforming Technologies, Process (Re) Engineering, Process Improvement
Supplies	10 ingredients. Ingredients sourced with variable availability where costs set via bidding wars
Product Setup	10 products. Each has a mix of up 10 ingredients with varying quantities, costs and availability
Labour	10 types. Labour / Skill sets are priced per hour and set hours to produce particular product
Logistics	Warehouse & Transport. Choice of location, varied transport factors: Fuel Cost, Loading
Sales	Pricing. Set in competition to other teams. Lower prices lead 'price-war' –using *price elasticity*
Marketing / Advertising	3 Medias. Choice of media per product. Use of *advertising elasticity* principle for sales shift
1st to Market	First Mover Advantage. Team submitting work 1st, 2nd, 3rd get market sales share advantage
Responsible Citizen	2 Causes. *Environment* and *Social Causes.* Teams may contribute using *cash* or *cents/$ Sale*
Assessment	Scoring Module. Scores team on any element of performance: weighting, penalties / rewards
Dynamic Graphing	3 Graphs. *Administrator* can graph teams against any measure for all *quarters* or any *quarter*
Liquidity Table	Cash Flow. Allows *Teams* to track their liquidity / cash balance or if they are ***insolvent***
Financials (Year)	P&L, Cash Flow, Capital, Share Price. Allows *Teams* to review their financials at one glance
Financials (By Quarter)	P&L, Cash Flow, Capital, Share Price. Allows *Teams* to review their financials at one glance
Submission Time Table	Records time of submission. This is used to calibrate the *1st to Market* advantage

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Running a Financial Portfolio (Shares & FOREX)

Sharetrends Pty Ltd – Back Office Function

Objective	To track the trades and associated profit and losses to portfolio holders
Challenge	1. Processing all trades 2. Tracking trade gains, losses and fees 3. Tracking the portfolio share values of each stakeholder
Traditional Solution	Back office solutions ranging from automated to manual
Solution	Apply the Algomatics™ methodology geared to process trades by trader(s)
Outcomes	Process trades by trader(s) Apply this to the *Sharetrends* portfolio of cash and stock held Issue monthly reports on performance, portfolio value, drivers
Status	3 Years running live

The detail

The process collects the various trades by the trader
It then summarises this in a format that the *Portfolio* manager processes to change the total value
It then apportions the value to stakeholders
It also automatically adjusts shares in portfolios in the event of additions or exits

A *Word* report is automatically generated (no macros) for each stakeholder including *Sharetrends*
The report automatically narrates what happened to trades (profits / losses), portfolio gains / losses
It also advises the both the value and % shareholding for each monthly report cycle
(The report is linked into the data repository that holds all necessary numerical data)

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Demographic Profiler – The Alcoholic Beverage Industry

Socio-economic intelligence gathering with forward projection of the Market place

Problem	Shrinking demand for Alcohol – in particular Beer pivotal to Sales / Profit
Challenge	1. Significant shift in age groups and associated consumption of beer 2. Lobby groups are making inroads on the consumption of alcohol 3. Other lobby groups are poised to launch their campaign on alcohol
Traditional Solution	Consultants to do the analysis and report on trends – costly and timely
Solution	Apply the Algomatics™ methodology to allow a host of future 'what-if' projections based on a solid base of 41 years demographic data and industry trends
Outcomes	1. Isolated, quantified and modelled serious and emerging threats to the *Alcohol Industry* and *Liquor Business*
Status	To be published with the appropriate retailer

The detail

Sourced 41 years of demographic data and 50+ year consumption data regarding: Beer, Wine Spirits and RTD (Ready-To-Drink). This data was used to track the trend of alcohol consumption. It was then used to project forward into the future the impact of:

1. Demographics - The rate of growth of the population compared to the last 40 years
2. Rate of growth of various age groups deemed to have certain consumption patterns
3. Rate of growth by gender is available which also experienced a change in consumption pattern
4. The Alcohol lobby group – isolating the impact it is likely to have by age groups
5. The Obesity campaign – isolating the impact it is likely to have by age groups
6. Community attitude towards the consumption of alcohol

Each of the six factors above influencing size of the market can be modelled separately. The impact of lobby groups can be isolated by age groups over a period of time.

The combined influence of the above 5 factors (and there could be more) is used to demonstrate the potential state of the market.

In Summary

The model clearly flags some key issues that is threatening that part of the Retail industry. There is a clear need to come up with key *Strategy* to address these key issues.

The current trend is a declining *Beer* consumption market that is declining at an increasing rate and is poised to accelerate even further.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

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Diversity

Emerging challenges, risks and veiled threats to the current issue of diversity

Problem	Where do we with gender and what are the challenges of the future
Challenge	1. Addressing *Diversity* issues 2. Working of perceptions 3. Addressing matters of organisational autopsy and not biopsy 4. Isolating and understanding the actual drivers
Traditional Solution	A suite of IT commissioned reports + a host of analysts generating reports
Solution	Apply the Algomatics™ methodology to provide a profiling tool that allows the organisation to conduct a health check / organisational biopsy. To facilitate this, a forensic / profiling tool is built to allow the SME to pursue trends, theories, hunches, concerns
Outcomes	1. An assessment as to where we sit with Diversity (Autopsy) 2. Looming threats identified (Biopsy) 3. Potential mitigation to steer the organisation to the right outcomes **A recognition certificate was issued "In recognition for your outstanding contribution to transforming the Coles Group Supply Chain. Thank you so much for you amazing analytical capability and helping us improve our diversity"**
Status	A course of action was taken to address some of the issues Recently the HR Director of a blue-chip company commissioned its use

The detail

Surveys, audits and health checks conducted on the subject have been via the traditional KPI measurement - reports that measure movements over a period of time. These are readily available via operational systems, data warehouses, data marts and Business Intelligence products. Often a plethora of reports and tools make access to this data almost seamlessly.

What they all have in common: It is autopsy - a measurement of drivers from the past. It also suffers from the inherent delay for a timely and quick-to-act 'response-to-market'. By the time you get the report, it is already dated. Then you decide to act on the data – which in turn takes time. You then wish to measure the effect of that response-initiative (policy / procedure / strategy) – but find yourself further behind the time curve.

The strategy for effective and proactive management is to shift the focus from the well-rehearsed analytical autopsy (which we still draw upon) to the proactive discipline of biopsy (which this BI tool supports). This approach is a transitioning journey. Here we start to draw on the disciplines of profiling, forensics, contextual analytics and finally predictive analytics. Whilst this approach may sound complicated, it is actually inherently simple and easy to learn.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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It starts out by tracking the *Life Cycle.* To do this, we draw on SAP (or other) data extracts measuring
Nominal Recruiting ➔ Effective Recruiting➔ Profiling .versus. Transitioning – The Journey ➔Exit

Similar to the disciplines in economics we compile a picture of both the macro (profiling the corporation) and compare this against the micro (the individual in the corporation). The following concepts below are some of the building blocks used by the tool

Nominal Recruiting: Uses the employee start date as a proxy. Measures the diversity of nominal recruiting - given a range of start dates
Effective Recruiting: Uses above as well as the exit data as a proxy. Thus it measures the retention sticky-ness over this given a range of dates
Profiling: Uses individual demographic, academic, professional credentials, ratings, etc. to profile the individual
Transitioning: Tracks the individual progress in the organisation and contexts these against profiles thus providing us the base for the contextual analytics
Exit: Profiles who exits, when, where and why (where why is qualified – as exit data is not deemed to be accurate due to a variety of reasons)

In Summary

Potential Risks that could adversely impact desired Diversity Outcomes were identified. From a risk management perspective, one could represent the various risks of managing and driving Diversity by the schematic below, where each of these may be measured and managed via the formulation of policy, processes, protocol and hopefully strategy

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Transport Network Simulation Runs +Transport services bids

In contrast to other software, this reruns actual historical data – the largest network in Australia

Problem	Evaluating competing bids against and assessing this against 'real' operational data as opposed to 'what-if'
Challenge	1. Tender bids for Australia wide transport provision can be complicated to assess. 100s of rates to be compared against 100s of other rates against current arrangements 2. A comparison of proposed rates (contract negotiations) against historical rates can also prove to be difficult if rate-zones are rezoned accompanied with a mix of rate increases and decreases 3. The risk of over generalising rate changes (via averaging demand by zone) across the entire Australian network is high
Traditional Solution	A spreadsheet averaging out transport movement is used to prepare the business case for or against rate reviews or bidding evaluation
Solution	Apply the Algomatics™ methodology to compile the company's entire annual transport operational data (12 months of history). Use this to rerun the proposed rates and zoning changes for all competing bids. This way, it is a rerun of history to see what it would have looked like had we accepted the proposal. This is in contrast to the averaging technique commonly used
Outcomes	1. Identified 'wins' and 'losses' in certain parts of the network 2. An informed decision can be made on any part of the network 3. Negotiations are based on actuals (facts) and not on averages
Status	Used to refine competing bids – where the company lost out or gained

The detail

The last 12 months of deliveries was extracted from *Manhattan's TMS* and was processed by the product. Thus the company's entire network transportation services (Over 1 Million deliveries to 1000s of stores out of 40 DCs) was captured – recording: From, To, Shared deliveries – Multi-Drops, type of goods, pallets, loads, vehicle utilisation, type of vehicle used (ambient, refrigerated, etc), size of vehicle used, when delivered (weekdays, weekends, public holidays)

This data was then used to rerun the new rates / bids of transport carriers to ascertain any gains and losses for all points of delivery in the network. This provided a real base of negotiation.

In Summary

The negotiation shifted from generalisation derived by averages to actuals demonstrated by specifics as derived from actual historical operational data. It was used to reverse an incorrect recommendation made by operators where averages were used. The product clearly demonstrated some of the weaknesses of the bids which the 'averages' approach could not pick up – it was averaged away.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Transport Network Analytics Profiler – Store Profiler

Corporate Software unable to provide analytics for Stores to decipher charges – Product built

Problem	Stores (Operations) would raise concerns about their transport charges. These may range from why charges have increased to claims of deterioration in service levels
Challenge	1. Logistics did not have the resources or products to address these 2. At times, concerns were raised based on perceptions (TY .vs. LY) 3. Identifying practices that have affected stores adversely (TY .vs. LY)
Traditional Solution	IT to build process that supports this analysis – would take months to build
Solution	Apply the Algomatics™ methodology to compile the company's entire annual transport operational data. The product would *reconstruct* this period's *Delivery Schedule* for the store in question and it would also *reconstruct* last period's *Delivery Schedule* An additional panel was created summarising both financial and operational KPIs – comparing this period against last period
Outcomes	1. Stores were given an detailed explanation as to what was driving costs 2. It took Logistics 1 week to handle one store enquiry. It now takes 5 min
Status	Was used by Store Operations Finance

The detail

The company's entire annual transport operational data (12 months of historical data) was obtained from *Manhattan's TMS.* Each period that period's operational data would be stripped from TMS to supplement the historical data. The product would then *reconstruct* this period's *Delivery Schedule* for the store in question and it would also *reconstruct* last period's *Delivery Schedule*. Each delivery had all the operational details to be viewed:

Delivery Date
Shipment Reference
Despatched DC
Total Charges
No. of Pallets
Utilisation of the Vehicle
Stores it shared the load with
Trading Profit Centre
No. Pallets by Trading Profit Centre
Charge by Trading Profit Centre
List of Stores that the Store shared the delivery with

In Summary

Supply Chain were not able to handle the enquiries. One Commercial Manager asked that these enquiries be not directed to him as it took him 1 week to address. The product addresses it within 5 minutes – providing it with a list of details enabling their own investigations

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Transport Network Analytics Profiler – Distribution Centre Profiler

Corporate Software did not have this function to provide analytics for Distribution Centres

Problem	Supply Chain Operations needed to articulate drivers behind the gap between *Budget / Forecast* and *Actual* – other than the traditional volume, contract rates and fuel based drivers
Challenge	1. Supply Chain had no BI tools to profile its operational performance 2. IT did not have the infrastructure and resources to support it
Traditional Solution	IT to build process that supports this analysis – would take months to build
Solution	Apply the Algomatics™ methodology to compile the company's entire annual transport operational data. It takes the current periods operational data and compares to the equivalent last year's period to determine: Destination mix ➔ Mix of local and interstate trips Distance mix ➔ Total distance travelled Pallets mix ➔ By destination Load mix ➔ By destination
Outcomes	Provided further insights as why costs were increasing
Status	Was used as part of a monthly Supply Chain review

The detail

The company's entire annual transport shipments data (12 months of *Shipment List* data) was obtained from *Manhattan's TMS.* Each period that period's shipments data would be obtained by running the *Shipment List* report to supplement the historical data. The product would then compile a *matrix* of **Distribution Centre (Y=Vertical Axis) against State Destination (X=Horizontal Axis)**. Each x - y co-ordinate has a current period and previous period to compare against.

In each of these cells we register the km travelled – both for current period and last period. This matrix is then repeated to provide a picture by *Load* and by *Pallet* – the KPIs Supply Chain were reporting on.

Traditionally, Supply Chain would explain increasing charges based on *Volume, Fuel Price Increases,* and *Rate Increases.* What was missing was the way operators would schedule their routes and consolidate (or not ➔ % utilisation) their loads and deliveries.

In Summary

The product provided further insights behind rising costs. It uncovered the practice of *Zone-Hopping* where transport operators where able to maximise revenue at the cost of increasing Logistics expenses. This practice was brought to the attention of the Transport Manager in charge of the zones resulting in reformed practices (not quantified).

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Transport Board Reports – Auto-generation of Board Reports

Algorithmic analytics and explanation derived analytics of operational and financial outcomes

Problem	Every month it would take 2 people 4-5 days to prepare the information to draft the Board Report on Transport.
Challenge	1. Reduce time down to 3 days 2. Reduce resource down to 1 person 3. Automate Board Report in *MS Word*
Traditional Solution	IT to build process would take months to build
Solution	Apply the Algomatics™ methodology to compile processes that would take data from *TM1*, *TMS* and *SAP*. The data in turn would be used to automatically analyse drivers behind cost movements explaining the *Budget/*Forecast *versus Actual*
Outcomes	Board Report automatically generated (90%) – 1 resource taking 3 days
Status	Implemented 2009

The detail

Instead of consulting various SAP reports, TM1 reports and TMS reports to ascertain the drivers behind costs and the gap between *Budget/Forecast* versus *Actual,* the process would source the data, analyse and then generate the text in Word to explain the result.

The *MS Word* document (which the Board report was written in) was linked and automatically updated by *Algomatics™* processes. All that needed to be done was to review the auto generated Board Papers and add any additional comments if required.

In Summary

Algomatics™ integrated special purpose built *Excel* processes linked to *TM1* (which sourced data from SAP), purpose built standalone *Excel* processes (which sourced data from *TMS's FER Report, Shipments Report* and *Brand Charging* report) and then generated the explanations into a *MS Word* document – the Board Report.

This approach automated a lot of the analytics and eliminated clerical errors in the report. Instead of two resources working on the Board Report for 4 days, only one person was needed to produce the report in less than 3 days.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

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Transport Benchmarking / Budget / Forecast / Actual Graphics Profiler

Operational and Financial Tuning tool

Problem	Ease of benchmarking against other sites, State(s), Zone(s) or Total Network Budget / Forecast review cycles tend to be protracted and tedious Budgeting / Forecasting errors sometime occur without realisation Anomalous practices occur that often do not get noticed
Challenge	1. A profile that allows the executive or line manager to quickly review 2. A quick way to isolate areas that still need to be addressed 3. A quick way of spotting irregularities – graphically
Traditional Solution	IT to build process would take months to complete
Solution	Apply the Algomatics™ methodology to compile a BI tool allowing one to benchmark a site against any other site, State, Zone, National Network **OR** Quickly 'eye-ball' the proposed budget / forecasts via dynamic graphical profiling **OR** Trend analysis, exceptions, anomalies to be graphed and presented a host of KPI to compare in a form of a matrix combinations
Outcomes	Tool used successfully to challenge Budgets and Forecasts
Status	Implemented 2008

The detail

It was difficult to benchmark Distribution Centres against any part of the network – be it another site, State, Zone or the Total Network. No tool existed. Budget and Forecast reviews tended to be tedious based on copious amount of rework and running of reports – mostly just data centric with little graphical profiling.

A product was built that used last year's actual data for transportation, used this year's Budget or Forecast proposal and then allowed the operator to profile for trends, differences, exceptions for clerical proposals (that is Budget/Forecast = Actual + CPI without any attempts for changes).

The product would allow the operator to segment the network by: Network Total, Northern Zone, Southern Zone, State or Distribution Centre. It would allow you to compare any KPI statistics: Loads, Costs, ATR, CPC, OTR, CPC Variance, Cost Variance.

In Summary

The permutation of benchmarking and comparison would range into the hundreds. One could compare and graph a Distribution centre against any Distribution Centre, against its own State or its own Zone or against the National result on any KPI for any year.

It would graph any combination of KPIs and do so by comparing against previous years. It would summarise the key statistics in a simple matrix table and advice of the movements between the years in question.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

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Workforce Scheduling Forensics – Supermarkets

Corporate Software unable to provide analytics for Stores to gain insight into issues – Product built

Problem	What-if modelling of large set of data involving Supermarkets workforce
Challenge	1. Capturing the corporation's entire network's workforce data to model 2. The flexibility to model hours and awards aligned to customer via sales
Traditional Solution	IT software development exceeding 12 months
Solution	Apply the Algomatics™ methodology to build a business intelligence layer sitting above the operational data provided. The BI product would draw on that data for any point in the network to model better workforce outcomes including award negotiation impacts
Outcomes	1. Various opportunities highlighted 2. A senior GM interested in deploying this in another Retail company
Status	Product built and ready to launch by key executive just before Wesfarmer's take-over bid of Coles-Myer. Senior executive left the business

The detail

The entire Supermarkets network actual workforce attendance was loaded into the application. The product would allow you select any store and then go about profiling the actual workforce attendance providing information for each department on:

Mix of employees used: Full-time, Part-time, Casual staff
The classification of staff – Trade / Profession, Award Grading for Pay (reflecting age and seniority)
Around the clock trading hour-by-hour staffing
Hour-by-Hour customer count for the store
Hour-by-hour sales by department

The tool would support investigations highlighting anomalies, opportunities or pockets of good or bad practices for any given point in the network based on the actual data provided.

The Business Intelligence tool would then allow one to model more efficient schedules either through the use of two sets of data:

- Historical data where one could 'repeat'/rerun history via the impact of a revised schedule **OR**
- Forecasted sales data which would be used to anticipate customer counts and hence staffing

Additionally, restructures of trading hours and a review of awards could be modelled through this product to highlight the impact of the proposed changes. The use of actual trading data served better in estimating the impact than the 'average' approach used in Budgeting / Forecasting scenarios.

In Summary

The product allowed one to model various workforce scheduling scenarios (based on ***real*** data) including the modelling of various award negotiation outcomes for any of the EBA agreements.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Isolating Issues with Workforce Scheduler – Supermarkets

Corporate Software unable to provide analytics for Stores to gain insight into issues – Product built

Problem	Lack of understanding of the workforce schedules being used to drive sales
Challenge	1. A 3rd party UK software was used to budget for weekly wage expenses 2. Anomalies between stores could not be articulated or explained
Traditional Solution	Difficult to say
Solution	Apply the Algomatics™ methodology to build a business intelligence layer that would peel back the layers of what was driving the expenses. This was mostly achieved by allowing the user to systematically isolate stores that it could compare itself against – and then compare the wages expense line
Outcomes	1. Insights 2. A way to articulate concerns
Status	Used by one Zone Finance Manager

The detail

Sophisticated UK software for optimising workforce schedules was used to construct optimised staffing schedules for stores (by department).Zone Finance Managers would use these to track actual performance against the schedules provided by this software - which were seen as 'budgets' for the week.

The issue was that as no one was able to proffer an explanation why certain staffing levels appeared to be lower of higher against (what some deemed to be) comparable stores.

A *Business Intelligence* tool was built to 'peel' back the various layers to isolate the comparators and quantify the influence that these may have had against comparable stores. Data / KPI isolated were:

Store
Self-Checkouts (SCO)
Department
Sales by Department
Sales Transaction by Department
Basket Size
Customer Count
Trading Hours
Total Hours Worked

The Zone Finance Manager, would be able to pick comparable stores based on *Trading Hours*, *Socio-economic* variables, *Sales,* etc and then compare what the software deemed appropriate against 'like' stores in order to ascertain whether the recommendation was reasonable / realistic.

In Summary

The particular Zone Finance Managers was better armed to discuss the recommendation of the software that was setting the budgets for the wages expense line. It therefore was not just a matter of 'blindly' following a piece of software which very few actually understood. He was now able to articulate what made sense and did not make sense as well as isolate comparative observations.

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd

Business Intelligence Case Studies

(Business Intelligence – Forensics – Profiling – Analytics)

Isolating Sales Performance Drivers – Supermarkets

Corporate Software unable to provide analytics for Stores to gain insight into issues – Product built

Problem	Impossible to make equitable comparisons of what was driving differences
Challenge	1. How to best isolate hundreds of different value drivers behind sales 2. Making sense of hundreds of drivers
Traditional Solution	Estimated to take months to hit the agenda and months to build
Solution	Apply the Algomatics™ methodology to build a business intelligence layer sitting above the plethora of *TM1* data provided. Then allowing a flexible analytical matrix supporting hundreds of permutation of drivers to isolate potential causes via the use of a top-down filtering tool
Outcomes	1. Insights as to which initiatives did more harm than good
Status	Used by one Zone Finance Manager to explain his Zone result versus others

The detail

A comparison of financial performances between (Store Operation) Zones is used to determine best practice and benchmark these best practices against other Zones (and their stores) – encouraging Zones (and their stores) to 'lift their game'. An experienced Operations Zone Finance Manager was of the view that the comparative performance of his Zone 1 against the other Zone 2 (within the same state) was somewhat tainted by certain operational initiatives.

Algomatics™ was used to provide a *Biopsy Tool* allowing the Operations Zone Finance Manager to methodically isolate what was really affecting his performance in comparison to the other Zone(s) in question. In short, he could isolate to see if the same (strategic, operational or tactical) initiatives in his Zone had the same kind of impact as it did in other Zones. The tool enabled one to isolate and filter down to a list of operational attributes which factored the:

Zone (to be included or excluded)
Region (to be included or excluded)
Stores (to be included or excluded)
Renewals (to be included or excluded): Basic, Full, Light, New Replace, Resize, Other
Customer Segmentation (to be included or excluded): Affluent, Middle, Value
Area (to be included or excluded): Dense Urban, Semi-Urban, Urban, Rural
ALDI distance from store (to be included or excluded): Same centre or various ranges of km's away
Woolworths distance from store (to be included or excluded): Same centre or various ranges of km's away

Then was able to compare that against another Zone, in order to see the difference in impact listing:

Sales: This Year compared to Last Year
Sales Transaction: This Year compared to Last Year
Basket Size: This Year compared to Last Year

Then it quantified how much of the above was due to *Volume* and how much was due to *Sales Mix*

In Summary

Used to comprehensive and quantitatively explain what worked well and what didn't work well by micro segment. This could be done in contrast to other Zones

Laurence R. L. Gartner
0400 734 735
Strategic Process (Re) Engineering Pty Ltd