



Welcome to:

**Best Practices in Analytics: Transforming
Data into a Strategic Business Asset**

**Presented by:
Tom Coghlan**

Learning Objectives

- Discuss the context of business analytics.
- Define technical concepts in layman's terms.
- Present an analytical framework.
- Reinforce learning through examples:
 - Insurance, Electronics, Gifts, Running Shoes, Gambling, Baseball, Convenience Stores.
- Discuss ideas to get started in the workplace.

Best Practices in Analytics

Transforming Data into a Strategic Asset



About the Presenter (1 of 2)

- CFO with IT responsibility.
 - ICI Americas (US business).
- Information Technology Consulting.
 - International and boutique firms.
- Villanova School of Business (VSB).
 - Business Fellow and Associate Director of the Center for Business Analytics.

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About the Presenter (2 of 2)

- Founder of CPE Content Provider
 - Online webcasts and review courses
- CFO and Managing Director, Mobile Application Development Company
 - Test prep software – CPA, CMA, CIA, etc

Three Statements – Do You Agree?

1. Companies of all sizes have invested enormous amount of time and money for information systems, yet many are not satisfied with the results.
2. Despite being in the “information age” many business are “information deprived”.
3. Better information leads to better decisions.

Buzz Words...or Useful Tools and Methodologies?

1. Business Intelligence.
2. Balanced Scorecard.
3. Dashboards and Scorecards.
4. Performance Management
5. Analytics

What is Business Intelligence?

- Collection, management and reporting of data:
 - Transactional systems or third party data.
 - Data warehouse.
 - Management reporting.

What's Needed for Business Intelligence?

- **Business Intelligence product.**
 - Historically “bolt-on” applications from standalone vendors.
 - Now becoming integrated with transactional systems.

What is Business Intelligence's Value?

- **Answers questions such as:**
 - What happened?
 - When did it happen?
 - What was the financial impact?
- **Provides a process to develop answers**
 - Standard and ad-hoc reports, alerts.

What is the Balanced Scorecard?

- “Strategic planning and management system used to align business activities to the vision and strategy of the organization”

Robert Kaplan and David Norton

“The Balanced Scorecard: Translating Strategy
into Action”

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Four Perspectives Give “Balance”

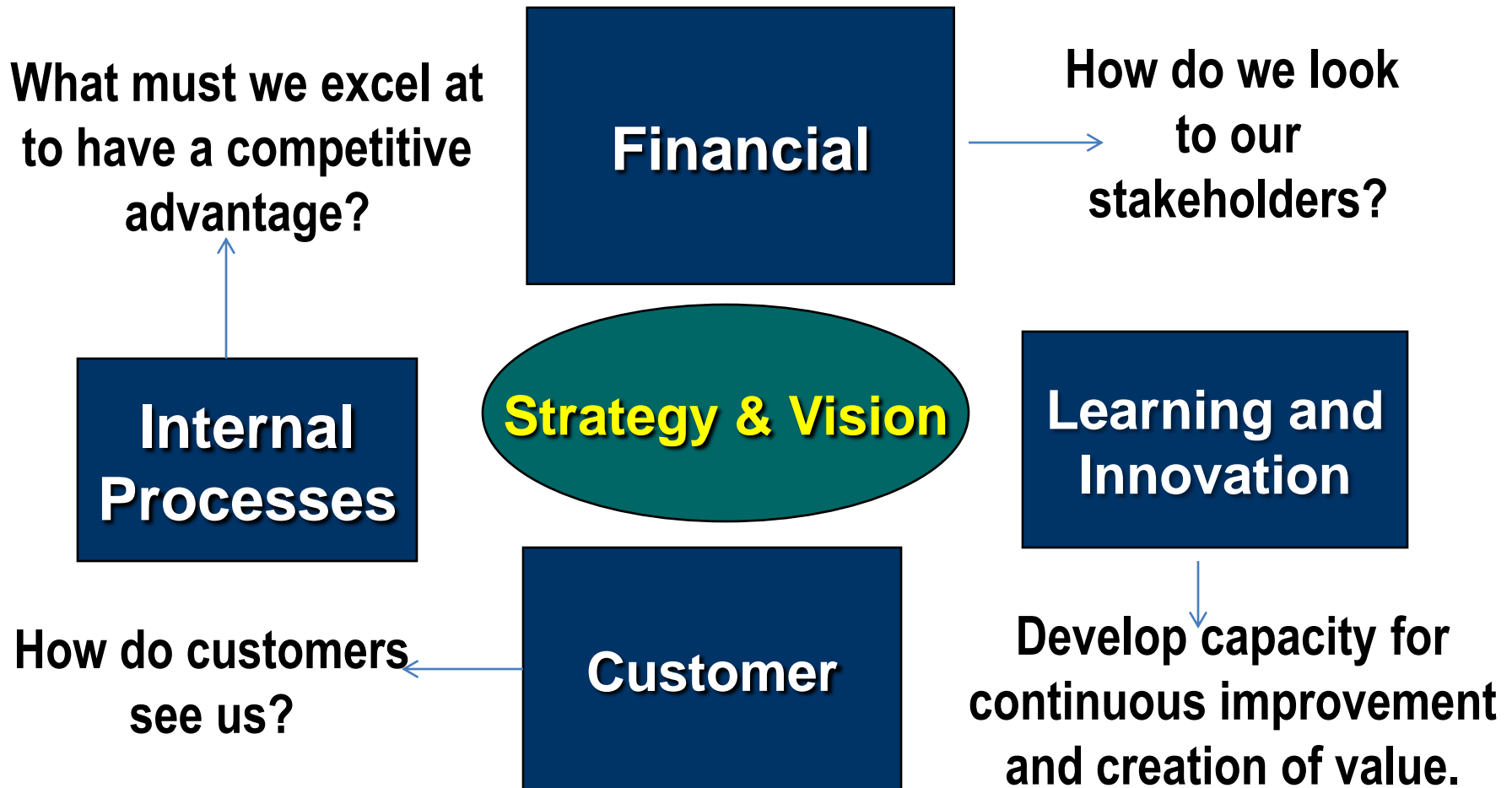
1. Customer.
2. Learning and Innovation.
3. Internal Process.
4. Financial.

What's Needed for the Balanced Scorecard?

1. Clear Strategic Direction
2. Financial and non-financial measures.
3. Leading and lagging indicators.
4. Organizational “Buy-in”

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Checking In

Why do you think the Balanced Scorecard has not been widely adopted?

1. Difficulties selecting proper measures.
2. Lack of top management support.
3. Cost of implementation.
4. All of the above.

Scorecards and Dashboards

“Is the purpose (of management) to better **monitor the dials**, or is it to facilitate the employee actions needed to **move the dials**?”

Gary Cokins

“Performance Management: Integrating Strategy, Execution, Methodologies, Risk and Analysis”

What is Performance Management?

“The translation of plans into results – execution. It is the process of managing an organization’s strategy”

Gary Cokins

“Performance Management: Integrating Strategy, Execution, Methodologies, Risk and Analysis”

What is Analytics?

“The extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions”

Thomas Davenport and Jeanne Harris

“Competing on Analytics”

What is Analytics?...A Condensed Answer

1. Data.
2. Statistical and quantitative analysis.
3. Explanatory and predictive models.
4. Fact-based decision making.

Adapted from:

Davenport and Harris

“Competing on Analytics”

What's the Value of Business Analytics?

- **Answers questions such as:**
 - What else can we do?
 - What if the trends continue?
 - What are best and worst cases?
- **Process to develop answers to questions**
 - Statistical analysis, predictive modeling, forecasting.

It Seems Interesting....Can We Have Less Theory?

- Every organization **can get started** with analytics, regardless of its size, budget, skill level, etc.
- To get started, an analytics framework is necessary.

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Checking In

Which functional area should lead an analytics effort?

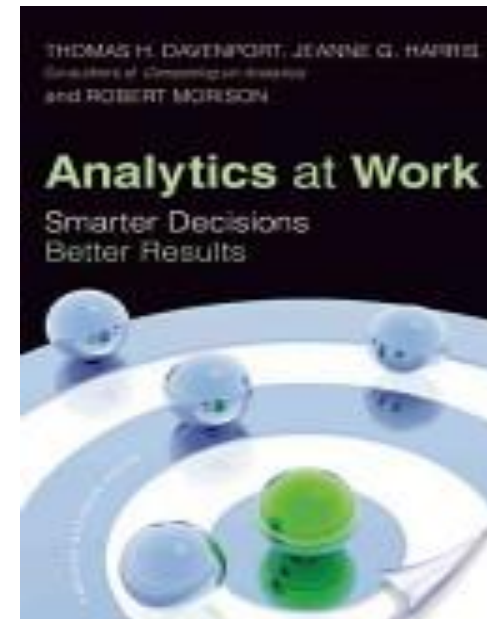
1. Sales.
2. Operations.
3. Finance and Accounting
4. Executive Management.

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The DELTA Model

- **Data**
- **Enterprise**
- **Leadership**
- **Targets**
- **Analysts**



Davenport, Harris and Morrison, “Analytics at Work”.

It All Starts With Data

- Proliferation of transactional systems.
 - SAP, Oracle, Seibel, Salesforce, MS Dynamics, QuickBooks, Sage, etc.
 - “Table stakes”.
 - **Billions** of dollars invested; Measuring Return on Investment (ROI) is elusive.
- Third party data is plentiful.

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Anthony Robbins

“If you do what
you've always
done, you'll
get what
you've always
gotten.”



Progressive Insurance: Revenue Growth

- **Problem:** Needed new markets to grow.
- **Analytics:** Developed models to analyze **non-traditional** rating variables.
 - Customer credit scores and education.
- **Decision:** Motorcycle insurance can be **very profitable.**

Key Learning

Progressive Insurance

- **Data can be an asset.**
- Why do acquiring firms pay more than the book value?
 - **“Intangible Assets”** add to the book value.
 - Effective use of data can be an **intangible asset.**

How to Turn Data Into An Asset

- Data must be unique.
 - Insights into customers.
- Data must be good quality.
 - Governance; Trace to source.
- Data needs to be leveraged **while you have the advantage.**

Start Small, Then Move Up

- Localized.
 - Solve a **specific problem**.
- Enterprise-wide.
 - “Compete on Analytics”
- **Large investments are not needed**– start small and increase **incrementally**.

Questions to Consider

1. Are all customers equal?
2. If all customers **are not** equal, how can a firm determine which customers are **more important?**

Pareto Principle

- **Roughly 80% of effects come from 20% of the causes.**
 - Vilfredo Pareto observed that 80% of Italy's land was owned by 20% of the population.
- **“80-20 rule”:** The **law of the “vital few”**.
 - 80% of customers account for 20% of revenue.
 - 20% of customers account for 80% of revenue.

Best Buy: Customer Segmentation

- **Problem:** Needed to integrate over 250 systems and data feeds.
- **Analytics:** 7% of customers accounted for 43% of the sales.
- **Decision:** Started the “Reward Zone” to reward and monitor key customers.

Key Learning

Best Buy

- Data needs to be consolidated.
- A **Data Warehouse** brings disparate data together into one common area.
 - Low end: Microsoft SQL Server, others.
 - High end: Oracle, IBM, others.

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Two Easy Questions

1. How many schools are in the "Big Ten" Conference?
2. How many schools are in the "Big Twelve" Conference?



Bringing Data Together

- **“Good data”**- required to create an asset.
- Goal is a **“Single version of the truth”**.
- Need to consider:
 - Granularity.
 - Drill-Down.
 - Latency.

Data Considerations

1. Granularity.

- Lowest level of detail (grain) supported.

2. Drill-down.

- Probing from summary to details.

3. Latency.

- Frequency data is **refreshed** from source systems. i.e. monthly, weekly, daily

ETL – Brings Data Together

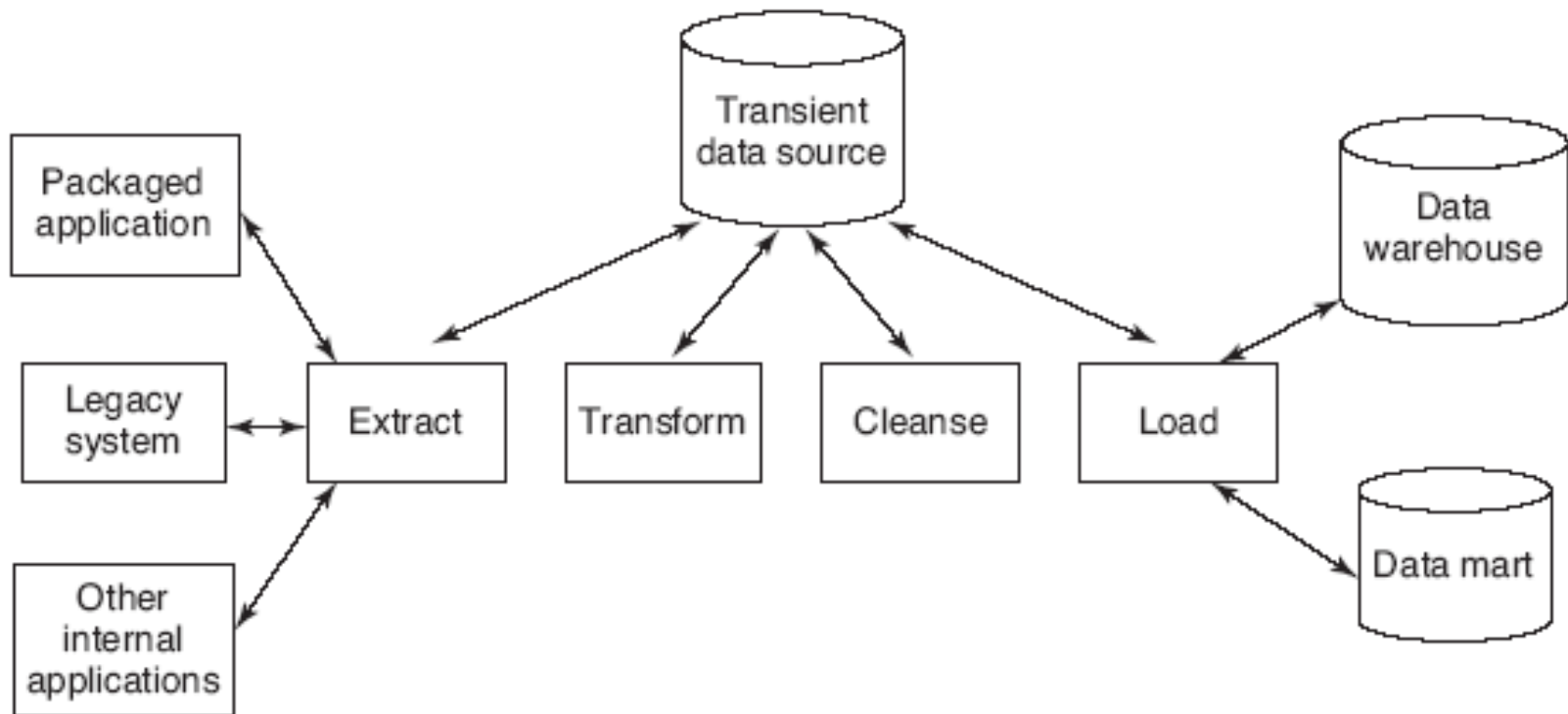
- **Extraction** - reading data from source systems.
- **Transformation** - convert extracted data from its previous form into the standardized data warehouse form.
- **Load** - putting the transformed data into the data warehouse.

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ETL – Brings Data Together

FIGURE 2.8 The ETL Process



Data Warehouse Features (1 of 2)

- Physical repository.
 - Hardware and software.
- Integrated, cleansed data.
 - Internal and third party systems.
- Standardized format.
 - Consistent reporting.

Data Warehouse Features (2 of 2)

- Time variant.
 - Days/weeks/months/years.
- Access throughout organization.
 - “Single version of the truth”.
- Nonvolatile.
 - Does not change.

Checking In

Which of the following best describes a data warehouse?

1. Monthly downloads of general ledger data.
2. Cumulative order history for last 10 years.
3. Customer shipment history and Dun and Bradstreet credit ratings.
4. Budget template sent out to 30 users.

Elements of Analytical Leadership

- People skills.
- Push for “fact based decision making.”
- Set a hands on example.
- Show persistence over time.
- Push for short-term results via **leverage.**

Analytical Leadership

Chris Mc Cann

1 800 Flowers.com

- Use of customer data is a **completive advantage**.
- Data is a **strategic asset**.



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1-800 Flowers.com

- Analytics in **customer segmentation**.
 - 35+ million customers, hundreds of millions of transactions.
 - Very **granular**.
- Customer “personas”
 - Research based; targeted programs.

“Competing on Analytics”

- 1-800Flowers.com extends their analytics strategy via acquisitions:
 - Fannie May Confections, Inc.
 - Cheryl & Co.
 - Winetasting Network.
 - Ambrosia Wine.
 - The Popcorn Factory.

Walking the Talk

**“I know what you think,
tell me what you can prove.”**

Chris McCann
1 800 Flowers.com

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Key Learning

1-800 Flowers.com

- Leadership sets the tone, establishes the vision, and is a huge factor in success of an analytics effort.

What to Target?

- Return on Investment is critical
- Resources are constrained
- Insight versus information
- “Find your opportunities and set your vision” (Davenport, Harris and Morrison)

Nike: Create Customer Value

- **Problem:** Commodity products; difficulty keeping brand loyalty.
- **Analytics:** Use analytics to provide “value added” benefit to customers.
- **Decision:** Leverage analytics to start Nike+ program.

Nike+ Data Value Chain

1. Data captured while running/walking.
2. Sync to iPod.
3. Upload to web site.
4. Value:
 - **Customers** – “self service” data access, reporting, add-ons.
 - **Nike** - customer insights.

Increased customer value.....increases revenue and profits

- Nike+ repositioned a **commodity product** into a **premium service**.
- Increased customer retention and loyalty after 5 uploads to the custom site.

Key Learning

Nike+

- Access to data can be packaged into a **value added** offering that provides clear differentiation versus competitors.

Checking In

The minimum cost to get started with an analytics project is?

1. Less than \$10,000.
2. \$10,000 - \$100,000.
3. \$100,000 to \$500,000.
4. Greater than \$500,000.

Quote to Consider

“Insanity is doing the same thing over and over again, and expecting a different result”.

Thomas Edison

Another Leadership Example

- Gary Loveman—President, CEO, and Chairman, Harrah’s Entertainment.
 - Was Harvard Business School professor.
 - Joined Harrah’s as COO in 1993.
 - Self described “data junkie”.

Harrah's Entertainment

- **Problem:** Competition and regulation made growth challenging without major capital spending.
- **Analytics:** Impact of increasing amount Harrah's kept from slot machine wagers.
- **Decision:** Minor increase in "hold" led to huge increase in revenue.

Analyzing Data at Harrah's

- **Targets** - Slot machine metrics.
 - “Pulls” and “hold”.
- Harrah's “experiments” showed that small increases in hold (from 7% to 7.1%) are inelastic.
- “Imperceptible” impact on total pulls.

Harrah's Entertainment

- **Problem:** Competition and regulation made growth challenging without major capital spending.
- **Analytics:** Used very granular customer data to identify an elite customer class.
- **Decision:** Harrah's Rewards Program.

Analyzing Customer Data at Harrah's

- 3 levels; 40 million customers.
- Track customer spend **by the visit**
- Loveman: “Biggest deterrent to a repeat visit is a bad outcome in the last visit”.
- 20 Gold customers = 1 Diamond customer.

Key Learning

Harrah's Entertainment

- Testing (predictive models) is essential to gather data.
- Analysis of data enables “fact-based” decision making.
- Analytics are essential to identify and service “best customers”.

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Checking In

The data at my company (or client) **has the potential** to be an asset.

1. Strongly Disagree.
2. Disagree.
3. Agree.
4. Strongly Agree.

What is Sabermetrics?

- Society for American Baseball Research.
- Attempts to answer **objective questions** about baseball.
 - Which player contributed the most to the team's offense?
 - How many home runs will a player hit next year?

From Night Watchman.....

- Bill James – father of Sabermetrics.
 - “The search for objective knowledge about baseball”.
- Self-published stats in 1970s;
- “Baseball Abstracts” in 1980’s.
- Use by baseball executives in 1990’s.

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.....to Mainstream Acceptance.....

- New metrics led to changes in player evaluation and compensation.
 - Runs created, range factor, game score.
- Ideas used extensively by Oakland A's
 - “Moneyball”
- Hired by Boston Red Sox in 2003.

...To World Series

“(James) taught us, among other things, that individual ballparks have a profound effect on a ballplayer's production, that the largest variable determining how many runs a team will score is how many times the leadoff hitter gets on base, that much of what we perceive as pitching is actually defense.”

John Henry, Owner Boston Red Sox

Data Needs Analysis...and Analysts

“We’re rapidly entering a world where everything can be monitored and measured. But the **big problem is going to be the ability of humans to use, analyze and make sense of the data.”**

–Erik Brynjolfsson, economist at MIT.

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“Adapt or Perish”

H.G. Wells

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\$7Billion of Coffee, Gas, and Sandwiches

Wawa

- Dominate Mid-Atlantic region; expanding to Florida in 2012.
- 2006 *New York Times* article
“Convenience Cult”



From Accountant to CEO

- Chris Gheysens –Started as Manager of Retail Accounting → CEO in 2012.
- Led efforts to consolidate data and use analytics for fact based decision making.
 - New store locations, new products, pricing.

What Can You Do? (1 of 2)

- 1. Increase your analytical knowledge.**
 - Books, websites, blogs
- 2. Look at other companies**
 - Best practices are often outside your industry.
- 3. Gain mastery over your data.**
 - General ledger, sales, purchases, inventory, etc.

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What Can You Do? (2 of 2)

4. Develop internal capability.
 - Learn, teach, coach, support.
5. Look for leverage.
 - Find allies for low risk projects.
 - Partner with Information Technology.
 - Discuss challenges with your clients.

Cheat Sheet - What is Analytics?

- 1. Data** – From a multiple sources; internal and external systems.
- 2. Analytical Techniques** – applied to the data.
- 3. Predictive or explanatory model** – tells the story.
- 4. Fact Based Decision Making** – use the analysis to make a decision.

Learning Objectives

- Discuss the context of business analytics.
- Define analytics concepts in layman's terms.
- Describe an analytical framework.
- Reinforce learning through examples:
 - Insurance, Electronics, Gifts, Running Shoes, Gambling, Baseball, Convenience Stores.
- Discuss ideas to get started in the workplace.

Checking In

The goals of this presentation have been met.

1. Strongly Disagree.
2. Disagree.
3. Agree.
4. Strongly Agree.

Analytics - The Perfect Storm

- Enormous investments in transactional systems.
- Web-based technologies; Advent of “Cloud Computing”.
- Proliferation of third party information.
- **Cost control** and **customer insights** are more important than ever.

**“Once a technology
advance starts, if you
not part of the steamro
you're part of the road
Stewart B**



Trends in Analytics
Using Data to Gain a Competitive Advantage



Thanks for Participating!

Tom Coghlan

Tcoghlan@thecpeuniversity.com

610 325-9162