Reading Assignment -3

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Why Dashboard Design is Important?

- Clearly communicates key information to users
- Makes supporting information easily accessible.
- Improve "span of control" over a lot of business data.
- Visually identify trends, patterns and anomalies.
- Easy to identify reason about what you see.
- Make effective decisions.
- Prevalence of scorecards, dashboards and other visualization tools now, widely available for business users to review their data, visual design is more important than ever.

NASDAQ's unique situation

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- The exchange needed to communicate to the average investor what was happening in the stock market each and every day.
- NASDAQ is a purely electronic stock exchange, there was no physical trading floor to take a television camera and no one to interview.
- NASDAQ created MarketSite at Times Square in New York City, which provides a 6x20 video wall with real-time graphic displays on the current state of the market.
- The result of this: networks such as CNN and CNBC, now broadcast more than 150 stories each day from this location.
- Clear graphics are critical for a broad audience to quickly assess the market information, thereby successfully communicating information to business professionals and consumers.

Focus on the User

- Every information user whether an analyst, senior manager or knowledge worker needs access to good and clear information.

- Give what the user needs

- For example, what does a manager require doesnot make sense to the client, and what an employee requires doesn't make sense to the employee at another department.

- Focus on the user and make visualizations clear and useful to the User.

Right Metrics and Right Visuals
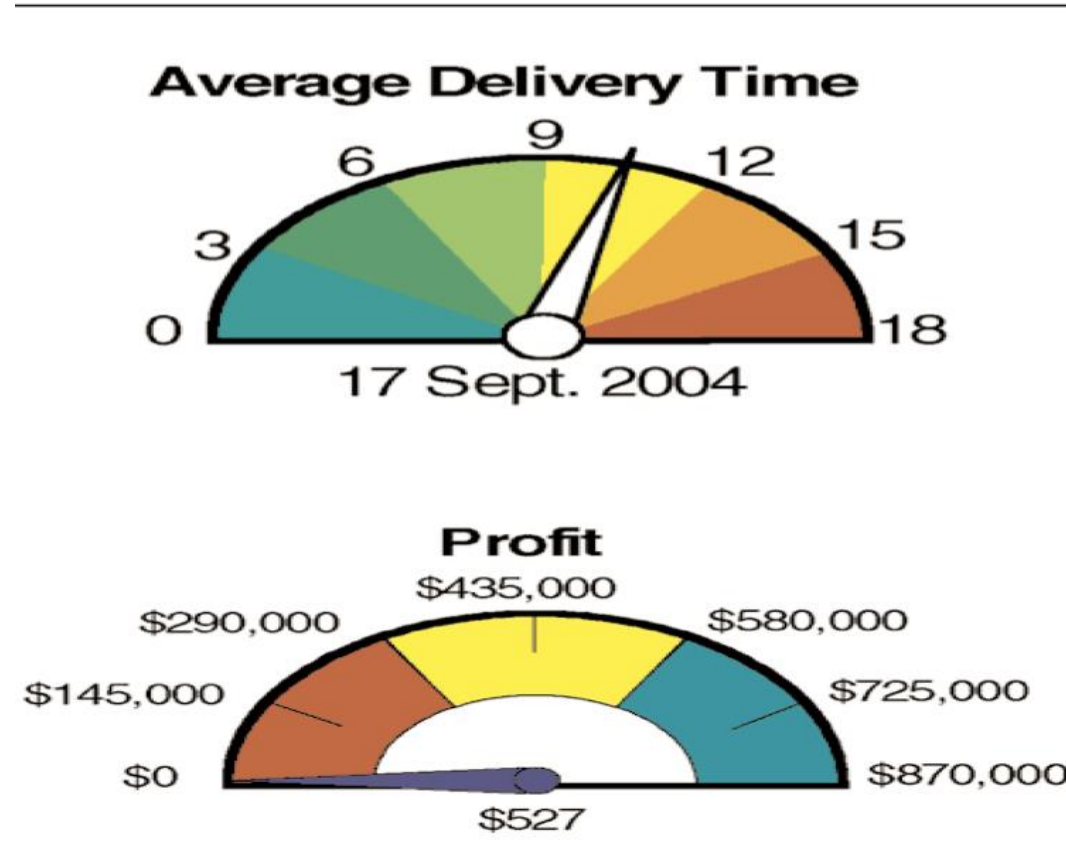
Right Metrics and Right Visuals

- The gauge on the bottom is clearly about profit, but on the first or second day of the quarter, profit is meaningless.

- Further, what is the target profit — is it $580,000 or is it $870,000?

- In the top example, there are no units of measurement identified — are they days, weeks or hours?

- **Zero is implied as the target, but is not realistic (all deliveries require some amount of time).**

- In both cases, the gauge representation does not provide an explicit indication of the target measure.

NASDAQ versus Gauge

- In both the NASDAQ and gauge examples, a key element to designing an effective representation is understanding the information consumer's needs

- What metrics do the users need to see?

- What context does each metric require to make it meaningful? (Target? Variance? Trend? Breakdown by region?)

- What is the **visual representation that best communicates the metric**. (Should the visual be a gauge, a table or a bar chart with a reference line? Should a pie chart or bar chart be used? What about a line chart versus a scatter plot or some entirely unique visual?)

Business Purpose

- As important as the individual metric and graphic that represents it is the overall business goal of the dashboard.

- Is the dashboard intended to keep 50,000 staff aligned to strategic goals or is it for managing a departmental goal such as minimizing risk exposure, managing marketing campaigns, optimizing supply chains or monitoring network threats?

- What is the action to be taken upon viewing the high-level information? Most likely, the first response to a poor number will be "Why?"

- In NASDAQ's case, the human news correspondent provides the story behind the number, but in a typical business case, some form of more detailed information will be required and should be easily accessible within the same interface.
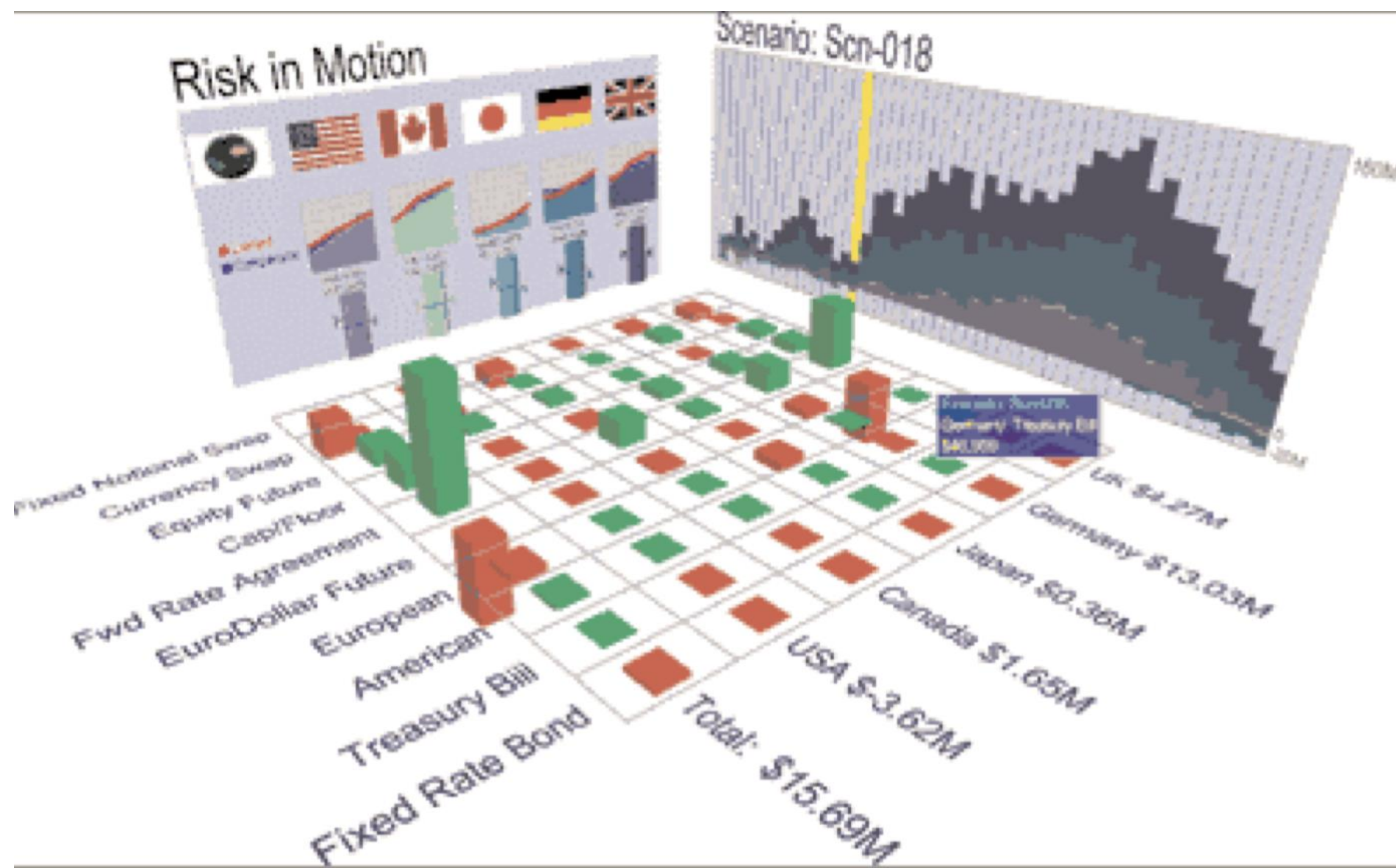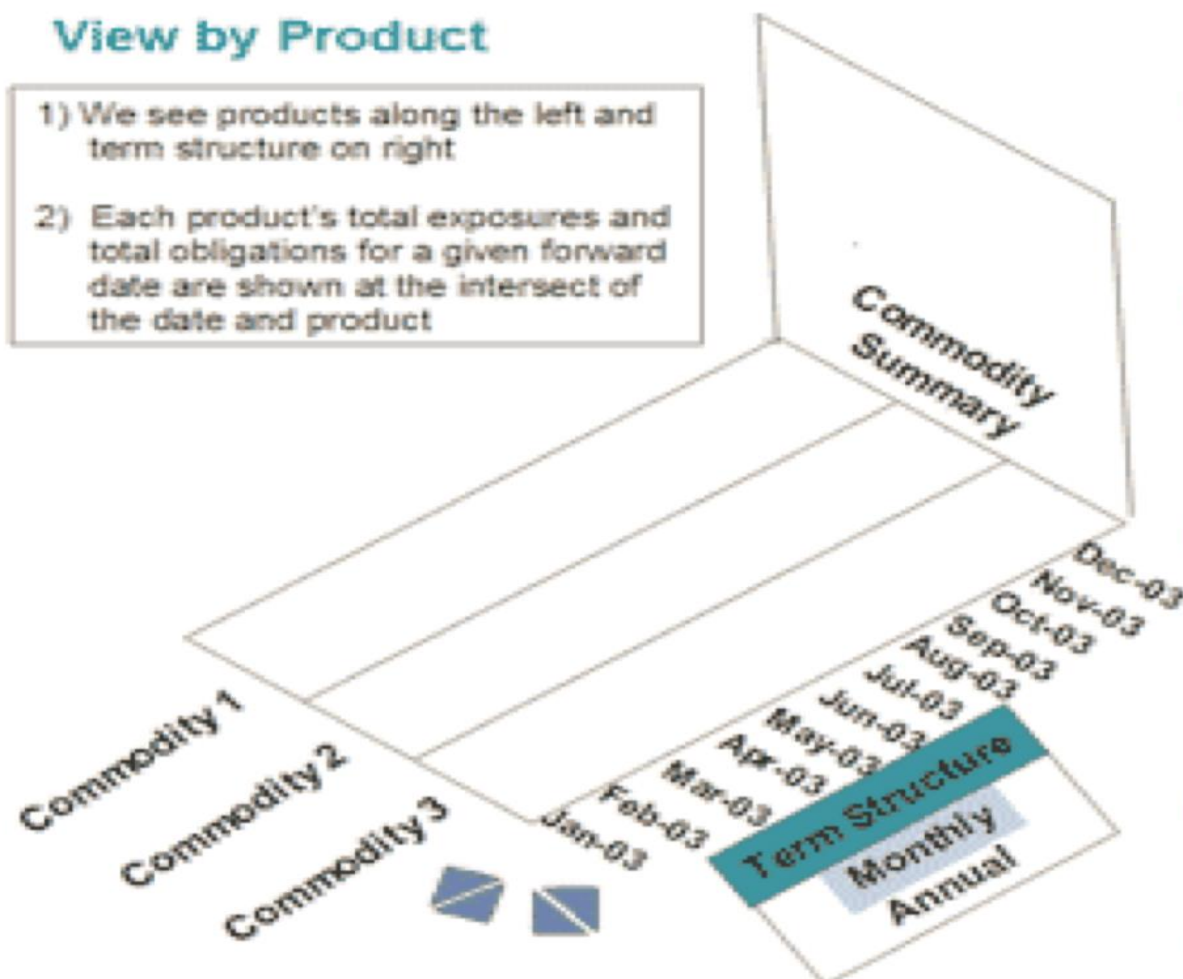
Decompostion of data (refer previous image)

- The right wall shows the profit and loss trend over time.
- The floor shows the decomposition by country and inventory category of the profit and loss.
- The left wall shows the causal factors (interest rates, stock market indexes, currency indexes).
- Simple controls enable the viewer to step through the time sequence to see when the changes occurred and the key drivers behind the changes.
- The user is able to understand cause and effect, trends and correlation to key drivers thereby getting a **clear picture of where we are and how** we got here — all in a single, integrated view.
- Thus, one key element is of design is to have a detailed understanding of user needs — both at a high level (business goals, decision requirements, workflow) and at a low level (appropriate metrics, context and visuals).

Sketches, Mockups and Prototypes

- Sketches and mockups help everyone conceptualize possible solution.
- Whether as simple as a tabular list of metrics and indicator icons or as advanced as a 3-D visualization, sketching the proposed dashboard significantly accelerates the design process, while simultaneously reducing the risk of delivering the wrong solution.
- These sketches can be as simple as whiteboard drawings or PowerPoint mockups.

View by Product

1) We see products along the left and term structure on right

2) Each product's total exposures and total obligations for a given forward date are shown at the intersect of the date and product

Commodity Summary

Commodity 1
Commodity 2
Commodity 3

Jan-03
Feb-03
Mar-03
Apr-03
May-03
Jun-03
Jul-03
Aug-03
Sep-03
Oct-03
Nov-03
Dec-03

Term Structure
Monthly
Annual

Menus

View By
- Counterparty
- Product
- Credit Rating

Risk Type
- Current - Financial MTM
- Current - Physical MTM
- Current - Settlement
- Future Risk

Sort By
- Exposures - Descending
- Exposures Ascending
- VaR Descending
- VaR Ascending
- Alphabetical

Lookup
- Counterparty
- Product
- Credit Rating

Sketches, Mockups and Prototypes (Contd.)

- Here is an example of an early mockup of the risk dashboard.
- The drawing was created by the business users after a whiteboard session.
- With these simple drawings, everyone was able to **articulate** what they needed to see and how they would like to interact with it.
- This drawing proved invaluable
- The business users were able to create various "walkthrough" scenarios to understand if the solution would handle their various requirements
- The technical staff were able to understand what data and infrastructure would be required for the application.
- The overall design and project team were able to refine these ideas into a visual design and a supporting technical architecture.

Sketches, Mockups and Prototypes (Contd.)

- Getting the right design for the visual interface is critical to success - a poor interface can have negative impact

- A glitzy dashboard, such as the gauge examples or extruded — D pie charts, may obscure or miss key information.

- A complex dashboard, such as patchwork solution of many different technologies, may be too arduous to use to provide any value.

- However, an optimal visual interface can provide value far beyond the numbers depicted in the picture. In one particular case, the right visual interface saved a $5 million technology infrastructure project that was too difficult to use.

Iterate
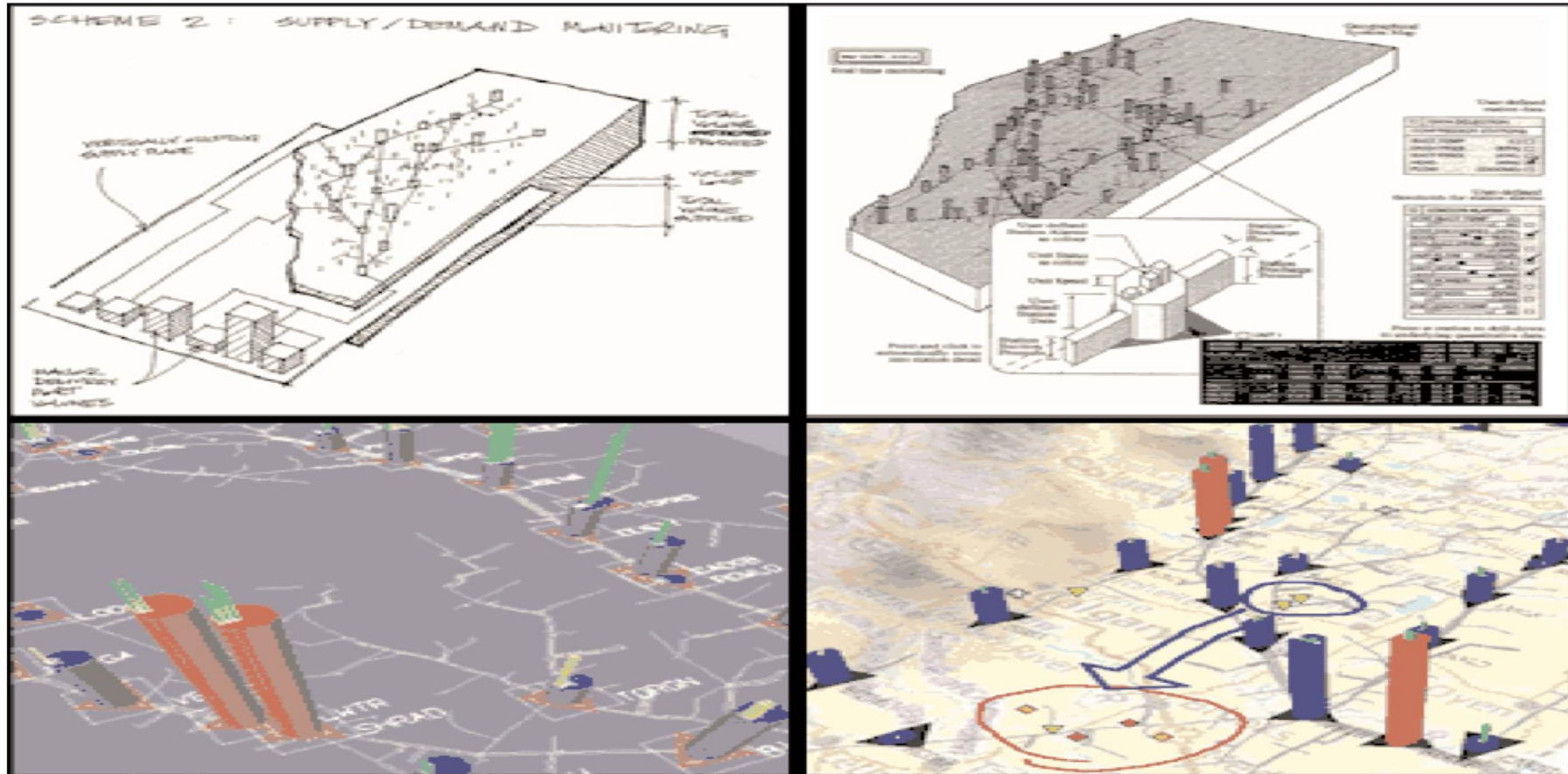
Iterate

- Over the course of various iterations of sketches and prototypes, many aspects of the design of this dashboard changed.
- By using the sketches and prototypes, the design process helped everyone refine their needs and requirements.
- For example, certain areas required more detailed information to be available at the "top" level.
- It became clear that various interactive drill-down capabilities would be required as was the integration of analysis and planning tools.
- Design iteration helps everyone

 -> refine vague design ideas into the best possible solution

 -> engages everyone to invest in the progression of the overall solution, which results in a higher degree of success.

Creativity and Expertise

- All the dashboards shown have a unique visual design.
- It is unlikely that there is a ready-made dashboard that will fit all the needs of a complex organization with particular insights and proprietary ways of adding business value.
- "You can't put a Jeep's dashboard in a Mini. "
- The reason for creating the dashboard is to assemble the unique collection of metrics with the appropriate visual presentation and easy interfaces to understand and drill down to the data level required to make effective decisions.
- Each company has a unique culture and strengths. Each has a competitive advantage that can be reflected in their unique processes and the data captured in these processes. Each department has unique expertise and capabilities.

Conclusion

- Creativity opens up new, innovative solutions.
- Individuals and organizations with expertise in the design and implementation of dashboards can help bring depth of understanding, experience of successes and failures from previous projects, research and diversity of skill sets.
- Effective design is crucial for dashboards. A good information design will **clearly communicate** key information to users and makes supporting **information easily accessible**.
- Understand who your user is, what they need and what their business goal is. Iterate through sketches, mockups and prototypes to explore, evaluate and narrow down prospective solutions. Use creativity and expertise, both internal and external, to get the best ideas and the right result.