EXPLORING MULTIMEDIA TRENDS IN MANAGERIAL REPORTING WITH A FOCUS ON EXECUTIVE DASHBOARDS

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ABSTRACT

Managers have long used various computer-based tools to support their decision making, such as Management Information Systems (MIS), Online Analytical Processing (OLAP) tools and Decision Support Systems (DSS).

In recent times, managers across the enterprise have gained access to new forms of visual digital management tools, and in particular: (a) the balanced scorecard and (b) digital dashboards. While the balanced scorecard is older and in more widespread use today, executive or digital dashboards are quickly becoming the tool of choice for managers seeking up-to-date information on critical aspects of the business.

In the future, executive digital dashboards will employ more sophisticated multimedia, such as sound and animation. Instead of gauges and charts, more sophisticated visualizations could be employed for data.

INTRODUCTION

Managers have long used various computer-based tools to support their decision making. The earliest tools were Management Information Systems or MIS that demonstrated little in the area of multimedia. MIS were text based reports that sometimes included some tables and graphs and were generated on a regular basis.

Page 1 — DETAILED PAYROLL REPORT PER PIN — 06/19/2006

04/03/2006 TO 04/07/2006

PIN	DATE	CHARGED DEPT.	PLANT	RESIDENT DEPT.	SECTION	SHIFT #	COST CENTER	PAY CODE	HOURS TYPE	ABSENCE CODE	EMPLOYEE RATE	DEPT. RATE	PAID RATE	HOURS MULTIPLYING FACTOR	PAID HOURS
EMP100	04/03/2006	DP185	P1	DP150	S1	CL1	CC185	PCAB	AB	AC10	22.0000	25.0000	18.5000	1.0000	1.0000
EMP100	04/05/2006	DP185	P1	DP150	S1	CL1	CC185	PCAB	AB	AC30	22.0000	25.0000	18.5000	1.0000	1.0000
EMP100	04/07/2006	DP185	P1	DP150	S1	CL1	CC185	PCAB	AB	AC11	22.0000	25.0000	18.5000	1.0000	8.0000
										MULTIPLYING FACTOR :	1.0000				10.0000
										HOURS TYPE : AB					10.0000
EMP100	04/04/2006	DP150	P1	DP150	S1	CL1	CC150	PCOT	OT		22.0000	25.0000	28.5000	1.5000	1.5000
EMP100	04/06/2006	DP150	P1	DP150	S1	CL1	CC150	PCOT	OT		22.0000	25.0000	28.5000	1.5000	1.0000
										MULTIPLYING FACTOR :	1.5000				2.5000
										HOURS TYPE : OT					2.5000
EMP100	04/03/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	2.5000
EMP100	04/03/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.5000
EMP100	04/03/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	2.0000
EMP100	04/03/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.0000
EMP100	04/04/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	3.0000
EMP100	04/04/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	2.5000
EMP100	04/04/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.5000
EMP100	04/04/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.0000
EMP100	04/05/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	3.0000
EMP100	04/05/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.5000
EMP100	04/05/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.5000
EMP100	04/05/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	1.0000
EMP100	04/06/2006	DP150	P1	DP150	S1	CL1	CC150	PCRG	RG		22.0000	25.0000	22.0000	1.0000	8.0000
										MULTIPLYING FACTOR :	1.0000				30.0000
										HOURS TYPE : RG					30.0000
														TOTAL :	42.5000

Source: http://www.ettendra.com/files/report1.jpg

Figure 1: An Example of a MIS Report

Newer Decision Support Systems or DSS included model based systems that generated various solutions to complex problems such as optimization-type problems. Again, these results were text based, with a number or set of numbers representing the desired solutions.

OLAP (Online Analytic Processing) systems followed, with their representation of data across multiple dimensions. They allowed users to query data across these multiple dimensions and predictably, the results or outputs were typically provided in tabular form.

		Australia	Canada	France	Germany	United Kingdom	United States	Total
		Internet Sales Amount						
FY 2002	H1 FY 2002	$1,309,047.20	$146,829.81	$180,571.69	$237,784.99	$291,590.52	$1,100,549.45	$3,266,373.66
	H2 FY 2002	$1,259,654.19	$426,271.16	$233,673.62	$275,568.18	$258,916.81	$1,351,626.62	$3,805,710.59
	Total	$2,568,701.39	$573,100.97	$414,245.32	$513,353.17	$550,507.33	$2,452,176.07	$7,072,084.24
FY 2003	H1 FY 2003	$894,630.70	$195,331.22	$281,268.39	$245,662.66	$332,670.05	$775,069.93	$2,724,632.94
	H2 FY 2003	$1,204,954.73	$109,679.47	$352,131.31	$347,584.58	$363,924.93	$659,226.34	$3,037,501.36
	Total	$2,099,585.43	$305,010.69	$633,399.70	$593,247.24	$696,594.97	$1,434,296.26	$5,762,134.30
FY 2004	H1 FY 2004	$1,828,829.48	$426,104.99	$674,193.66	$710,821.15	$934,323.64	$2,179,286.02	$6,753,558.94
	H2 FY 2004	$2,554,650.06	$662,774.51	$918,687.09	$1,073,285.94	$1,206,064.86	$3,304,596.65	$9,720,059.11
	Total	$4,383,479.54	$1,088,879.50	$1,592,880.75	$1,784,107.09	$2,140,388.50	$5,483,882.67	$16,473,618.05
FY 2005		$9,234.23	$10,853.70	$3,491.95	$3,604.83	$4,221.41	$19,434.51	$50,840.63
Total		$9,061,000.58	$1,977,844.86	$2,644,017.71	$2,894,312.34	$3,391,712.21	$9,389,789.51	$29,358,677.22

Source: http://bi-insider.com/posts/bi-maturity-model-level-4/

Figure 2: An Example of an OLAP Report

CONTEMPORARY EXECUTIVE (DIGITAL) DASHBOARDS

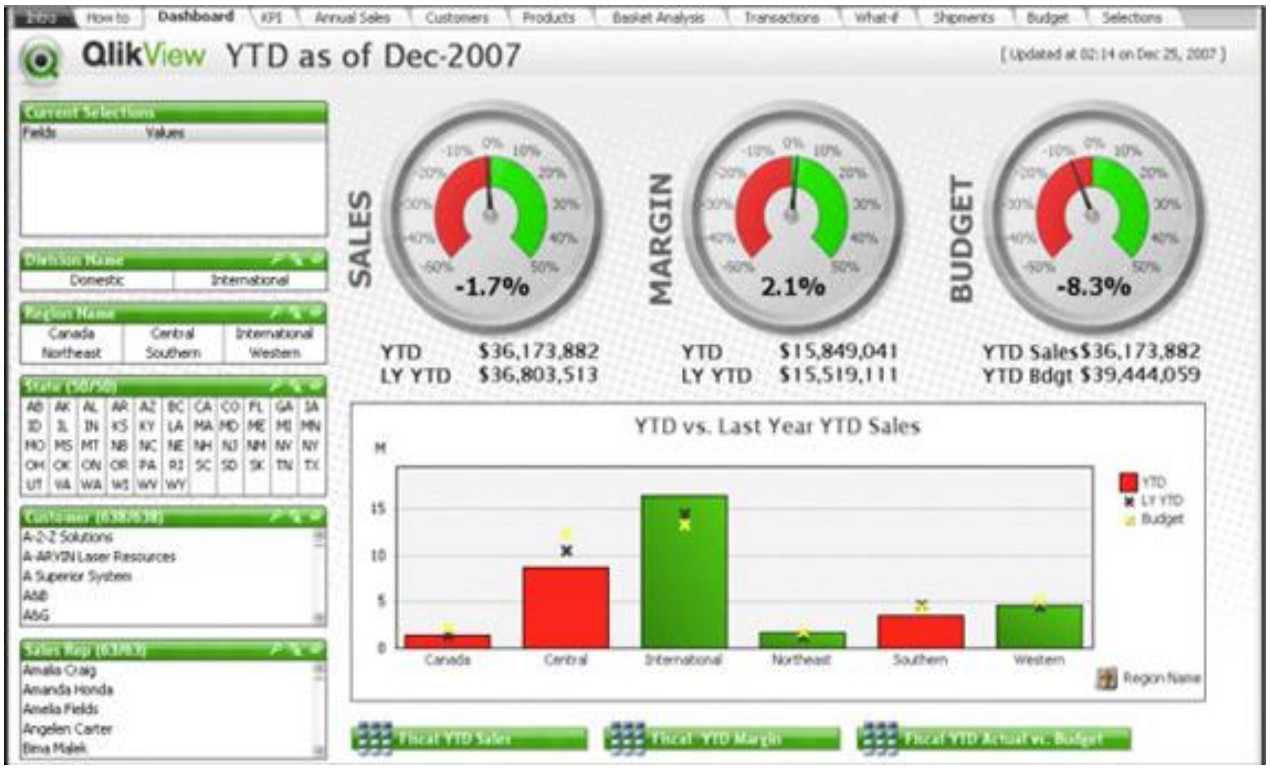
In recent times, the trend is to provide managers across the enterprise new forms of visual digital management tools, and in particular: (a) the balanced scorecard and (b) digital dashboards. While the balanced scorecard is older and in more widespread use today, executive or digital dashboards are quickly becoming the tool of choice for managers seeking up-to-date information on critical aspects of the business.

There are 3 main types of digital dashboards:
(a) standalone software dashboards,
(b) browser-based dashboards, and
(c) desktop applications also known as desktop widgets.

With browsers being ubiquitous, these are now the preferred approach of many corporations where the web is the primary user interface for most applications.

Digital dashboards designed to track financial and nonfinancial critical success factors (CSFs) for the business, together with company performance in critical areas. Digital dashboards place a dependence on their success on the metrics chosen. These are often referred to as Key Performance Indices (KPIs) and they monitor everything from sales figures to spending.

The use of the ‘dashboard’ paradigm reflects a car analogy, where the dashboard provides information for the driver (decision maker) to make decisions that “drive" the business. Graphical user interface (GUIs) are usually employed to display summaries, graphics (e.g., bar charts, pie charts, bullet graphs, "sparklines," etc.), and car-like gauges (with colors similar to traffic lights) to highlight important information.



Source:http://www.etechnoforte.com/products/qlikview.html#/images/stories/gallary_img/qlikview01.jpg

Figure 3: An Example of a Digital Dashboard

Graphically, users see high-level processes which they can then drill down further into lower level data. Ultimately, senior executives can access levels of detail is deep within the enterprise that would be otherwise unavailable to them.

Specialized dashboards may may be designed for all the functional areas of a business, such as finance, human resources, recruiting, sales, operations, security, information technology, project management, customer relationship management and others.

SUMMARY AND FUTURE DIRECTIONS IN MULTIMEDIA FOR EXECUTIVE DASHBOARDS

We can draw some conclusions in studying the evolution of applications for management reporting. The first observation is that over time, these applications have grown more graphically sophisticated and visually appealing. From plain text, they evolved to nicely formatted tabular data - often with pie charts and other basic charting types. Today’s executive dashboard however, is vastly different from earlier types of reporting tools.

Digital dashboards are also different from prior reporting types in that they present to the user 'active' reports and not passive or static data. Thus, a manager can click on a chart or gauge to drill down to new levels of data detail as well as 'roll up' lower levels of data on the fly to see aggregates.

In the future, executive digital dashboards will employ more sophisticated multimedia, such as sound and animation. Instead of gauges and charts, more sophisticated visualizations could be employed for data.

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