SUMMARY REPORT

2nd BUSINESS MEASUREMENT RESEARCH WORKSHOP

August 13-14, 2002

Plaza San Antonio
San Antonio, TX, USA

Sponsored by
The KPMG & UIUC
BUSINESS MEASUREMENT RESEARCH PROGRAM

Summary compiled by
KPMG’s ASSURANCE RESEARCH INSTITUTE
For General Information Purposes Only

This report has been compiled in an effort to provide perspectives for discussions and to simulate ideas among researchers on issues of business measurement with a view toward identifying important research questions for further development. This report is intended to provide a general overview of workshop proceedings and does not necessarily represent specific views and opinions of KPMG LLP, the University of Illinois, or any individual participant at the workshop.
SUMMARY REPORT

INTRODUCTION

On August 13-14, 2002, the KPMG and University of Illinois at Urbana-Champaign (UIUC) Business Measurement Research Program (Program) held its 2nd Business Measurement Research Workshop in San Antonio, Texas, USA.

The Program seeks to advance knowledge in a variety of areas involving business measurement, reporting and assurance by supporting collaborative research (among academics, practitioners, and high-level executives from leading business organizations) that develops and validates new measurement, reporting and assurance models, concepts and practices. More information regarding the Program is presented in Appendix 1.

This workshop, the second in a continuing series, was preceded by the Program’s first workshop in Copenhagen, Denmark on April 28, 2002 at which participants from the European academic and business communities surfaced the “research space” comprising the most pressing problems in the business measurement domain in need of rigorous research from their respective perspectives. (Refer to separate summary report for the Copenhagen workshop).

WORKSHOP OBJECTIVE

The objective of the second workshop was to obtain input from the academic community on what are the major academic research themes in the business measurement domain that will address the increasing challenges and opportunities, emerging from recent technological, economic and regulatory changes, for improving extant business measurement, reporting and assurance models, concepts and practices.

Scholars attending the workshop included managerial and financial accounting professors from top accounting programs in the United States (primarily) and abroad. A list of workshop participants is provided in Appendix 2.

WORKSHOP ACTIVITIES

The workshop included:

- A presentation by Profs. Robert and Alison Ashton from Duke University providing a review and synthesis of (some of the commonly known) value-generation frameworks in today’s business environment. The presentation was intended to set the tone for group discussions to follow around developing an “organizing framework” for business measurement research;

- A collaborative group session during which participants (working in six separate groups with a designated group leader) shared their respective views on major researchable themes, prioritization issues and the cost/benefits of tackling (or ignoring) specific research topics or themes; and
Group leader presentations & open discussion session to distill the thoughts surfaced during the collaborative group sessions with an objective of surfacing major research themes for the Program's first request for proposals (RFP).

The six group leaders were requested to facilitate continuing exchange of ideas among their respective group members after the workshop and to submit a written report summarizing the views of the group by September 15, 2002.

WORKSHOP PRESENTATION

The two professors from Duke University, Profs Robert and Alison Ashton, commenced their presentation with an overview of the increasing challenges and opportunities in today’s complex business environment for improving extant business measurement, reporting and assurance models, concepts and practices. They characterized the current business environment as one involving increasing:

- Efforts to identify the drivers of value-generation for managerial use;
- Recognition of the importance of intangibles;
- Expectations for complete and transparent reporting to stakeholders;
- Calls for nontraditional disclosures; and
- Demands for accountability both inside and outside the business corporation.

The presentation followed with a review and synthesis of some of the popular models proposed to date for value-generation and reporting. These models included, the Balanced Scorecard (Kaplan & Norton, 1992), Skandia Navigator (Edvinsson & Malone, 1997), Intangible Asset Monitor (Sveiby, 1997), Employee-Customer Profit Chain (Heskett et al, 1997), Intellectual Capital Model (Roos et al, 1998), EFQM Excellence Model (1999) and Value Chain Scorecard (Lev, 2001). The professors then presented their own integrated framework that considered three dimensions of organizational strategy within a “knowledge value chain” for developing a broad business measurement taxonomy.

The professors then posed the following questions to participants to foster discussions around matters that need to be considered while developing an “organizing framework” for business measurement research:

- Are these proposed frameworks supported by research? Do they rest on accepted views of organizational value-creation? How and to what extent do they complement each other? What do they have in common?
- Do these frameworks provide an organizing framework for research?
- Do these frameworks expose gaps in the extant research literature?

The general view among the participants appeared to be that there is very little rigorous empirical evidence to assess conditions under which one framework dominates the other. One of the groups suggested that, “…while there may be some potential for empirical research to evaluate these prescribed frameworks, it will be important for researchers to derive hypotheses based on well-grounded theories drawn from basic disciplines such as economics, psychology or organization behavior.”
COLLABORATIVE GROUP SESSIONS

During the collaborative session, participants worked in groups to deliberate on possible research themes for consideration for the Program's first “Request for Proposal” (RFP) to be distributed soon. Working in their respective groups, participants identified what they collectively believed to be major researchable themes, prioritization issues and the cost/benefits of tackling (or ignoring) specific research topics or themes.

The major themes that emerged during the collaborative session are broadly categorized as follows:

- Research on “Levels of Analysis” and “Measurement Issues”;
- **Industry-Specific** Research (some groups speculated about the need to focus more on business models than on industries);
- Research on **Business Risk Measurement**;
- Research on **Design of Measurement Systems**; and
- Research on **Designing & Validating Business Measures**.

Selected details from the written reports prepared by the groups have been categorized (as per above) and summarized/extracted/paraphrased in *Appendix 3*.

CONCLUDING NOTES

At the conclusion of the workshop the participants, and representatives from KPMG and UIUC, explored ways to continue the dialogue and evolve further the ideas developed during the workshop.

Ideas obtained from this and the previous workshop will be used to develop an initial business measurement research agenda for issuing a RFP under the *Business Measurement Research Program* in early October 2002.

Additional workshops that will include business leaders and KPMG professionals, as well as business scholars, are being planned for the near future.
APPENDIX 1

The KPMG & UIUC
BUSINESS MEASUREMENT RESEARCH PROGRAM
The KPMG & UIUC Business Measurement Research Program

The KPMG & UIUC Business Measurement Research Program (Program) is a collaboration that supports scholarly research on new concepts and practices in business measurement and assurance. KPMG LLP has pledged $2.8 million in financial support for the Program's initial three-year term commencing in 2002. In addition, KPMG LLP and the University of Illinois at Urbana-Champaign (UIUC) will provide administrative support for the program.

The Program seeks to advance knowledge in a variety of business measurement and assurance areas, including financial and non-financial measurement and reporting models for the future, business risk assessment and measurement techniques, and business controls’ performance measurement techniques. All research approaches and paradigms are welcome including modeling, archival, experimental and field analysis applications.

To benefit by advances in practice, and to anticipate future developments and needs, collaborative research teams involving academic researchers and leading business and accounting professionals will be given the highest funding priority for the research projects supported by this Program. The Program will have a global reach. Proposals received from research teams located anywhere in the world will be given consideration for funding. Also, the Program encourages interdisciplinary research teams to achieve synergies by combining multiple perspectives, experiences and skills.

During the summer of 2002, the Program will organize workshops in various locations around the world to seek information about the state-of-the-art in business measurement in academic research and business practice, and to help develop research priorities. The Program’s first request for research proposals will be distributed on or about September 30, 2002.

Contact Persons:

A. Rashad Abdel-khalik
CIERA
University of Illinois
1206 S. Sixth Street
Champaign, IL 61820
e-mail: rashad@uiuc.edu

Timothy B. Bell
Director, Assurance Academic Research
Assurance & Advisory Services Center
KPMG LLP
300 Tice Boulevard
Woodcliff Lake, NJ 07677
e-mail: tbell@kpmg.com
APPENDIX 2

LIST OF WORKSHOP PARTICIPANTS

2nd BUSINESS MEASUREMENT RESEARCH WORKSHOP

August 13-14, 2002

Plaza San Antonio

San Antonio, TX, USA
# WORKSHOP PARTICIPANTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashton, Allison</td>
<td><a href="mailto:aha1@mail.duke.edu">aha1@mail.duke.edu</a></td>
<td>Duke University</td>
</tr>
<tr>
<td>Ashton, Robert</td>
<td><a href="mailto:rha2@mail.duke.edu">rha2@mail.duke.edu</a></td>
<td>Duke University</td>
</tr>
<tr>
<td>Balachandran, Kasi</td>
<td><a href="mailto:kbalacha@stern.nyu.edu">kbalacha@stern.nyu.edu</a></td>
<td>Stern School of Business, NYU</td>
</tr>
<tr>
<td>Banker, Rajiv</td>
<td><a href="mailto:rbanker@utdallas.edu">rbanker@utdallas.edu</a></td>
<td>University of Texas, Dallas</td>
</tr>
<tr>
<td>Beck, Paul</td>
<td><a href="mailto:p-beck2@uiuc.edu">p-beck2@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Darrough, Masako</td>
<td><a href="mailto:Masako_Darrough@baruch.cuny.edu">Masako_Darrough@baruch.cuny.edu</a></td>
<td>Baruch College, CUNY</td>
</tr>
<tr>
<td>Del Bello, Adelle</td>
<td><a href="mailto:a.delbello@economia.unife.it">a.delbello@economia.unife.it</a></td>
<td>University of Ferrara, Italy</td>
</tr>
<tr>
<td>Dopuch, Nicholas</td>
<td><a href="mailto:dopuch@olin.wustl.edu">dopuch@olin.wustl.edu</a></td>
<td>Washington University, St. Louis</td>
</tr>
<tr>
<td>Ettredge, Michael</td>
<td><a href="mailto:mettredge@ku.edu">mettredge@ku.edu</a></td>
<td>University of Kansas</td>
</tr>
<tr>
<td>Farrell, Anne</td>
<td><a href="mailto:amf@uiuc.edu">amf@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Fischer, Paul</td>
<td><a href="mailto:pfischer@psu.edu">pfischer@psu.edu</a></td>
<td>Penn State University</td>
</tr>
<tr>
<td>Fisher, Joseph</td>
<td><a href="mailto:jofisher@indiana.edu">jofisher@indiana.edu</a></td>
<td>Indiana University</td>
</tr>
<tr>
<td>Ghosh, Dipankar</td>
<td><a href="mailto:dghosh@ou.edu">dghosh@ou.edu</a></td>
<td>University of Oklahoma</td>
</tr>
<tr>
<td>Gramling, Audrey</td>
<td><a href="mailto:agramling@gsu.edu">agramling@gsu.edu</a></td>
<td>Georgia State University</td>
</tr>
<tr>
<td>Khurana, Inder</td>
<td><a href="mailto:khurana@missouri.edu">khurana@missouri.edu</a></td>
<td>University of Missouri</td>
</tr>
<tr>
<td>Kulp, Susan</td>
<td><a href="mailto:skulp@hbs.edu">skulp@hbs.edu</a></td>
<td>Harvard Business School</td>
</tr>
<tr>
<td>Luft, Joan</td>
<td><a href="mailto:luftj@pilot.msu.edu">luftj@pilot.msu.edu</a></td>
<td>Michigan State University</td>
</tr>
<tr>
<td>Matsumura, Ella Mae</td>
<td><a href="mailto:ematsumura@bus.wisc.edu">ematsumura@bus.wisc.edu</a></td>
<td>University of Wisconsin</td>
</tr>
<tr>
<td>McKeown, James</td>
<td><a href="mailto:Jcm12@psu.edu">Jcm12@psu.edu</a></td>
<td>Penn State University</td>
</tr>
<tr>
<td>Merchant, Ken</td>
<td><a href="mailto:kmerchant@marshall.usc.edu">kmerchant@marshall.usc.edu</a></td>
<td>University of Southern California</td>
</tr>
<tr>
<td>Plumlee, Marlene</td>
<td><a href="mailto:actmp@business.utah.edu">actmp@business.utah.edu</a></td>
<td>Utah State University</td>
</tr>
<tr>
<td>Radhakrishnan, Suresh</td>
<td><a href="mailto:sradhakr@utdallas.edu">sradhakr@utdallas.edu</a></td>
<td>University of Texas, Dallas</td>
</tr>
<tr>
<td>Sarath, Bharat</td>
<td><a href="mailto:bsf675@baruch.cuny.edu">bsf675@baruch.cuny.edu</a></td>
<td>Baruch College, CUNY</td>
</tr>
</tbody>
</table>

...continued
WORKSHOP PARTICIPANTS (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudagaran, Shahrokh</td>
<td><a href="mailto:shahrok@okstate.edu">shahrok@okstate.edu</a></td>
<td>Oklahoma State University</td>
</tr>
<tr>
<td>Sedatole, Karen</td>
<td><a href="mailto:karen.sedatole@bus.utexas.edu">karen.sedatole@bus.utexas.edu</a></td>
<td>University of Texas, Austin</td>
</tr>
<tr>
<td>Shapiro, Brian</td>
<td><a href="mailto:shapi007@umn.edu">shapi007@umn.edu</a></td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>Shields, Michael</td>
<td><a href="mailto:shields@pilot.msu.edu">shields@pilot.msu.edu</a></td>
<td>Michigan State University</td>
</tr>
<tr>
<td>Sougiannis, Theodore</td>
<td><a href="mailto:sougiani@uiuc.edu">sougiani@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Sprinkle, Geoffrey</td>
<td><a href="mailto:sprinkle@indiana.edu">sprinkle@indiana.edu</a></td>
<td>Indiana University</td>
</tr>
<tr>
<td>Tan, Hun Tong</td>
<td><a href="mailto:ahttan@ntu.edu.sg">ahttan@ntu.edu.sg</a></td>
<td>Nanyang Technological University, Singapore</td>
</tr>
<tr>
<td>Trotman, Ken</td>
<td><a href="mailto:k.trotman@unsw.edu.au">k.trotman@unsw.edu.au</a></td>
<td>University of New South Wales, Australia</td>
</tr>
<tr>
<td>Van der Stede, Wilem</td>
<td><a href="mailto:wim@marshall.usc.edu">wim@marshall.usc.edu</a></td>
<td>University of Southern California</td>
</tr>
<tr>
<td>West, Tim</td>
<td><a href="mailto:tdw01@uark.edu">tdw01@uark.edu</a></td>
<td>University of Arkansas</td>
</tr>
<tr>
<td>Wu, Anne</td>
<td><a href="mailto:anwu@nccu.edu.tw">anwu@nccu.edu.tw</a></td>
<td>University of Taiwan</td>
</tr>
<tr>
<td>Wu, Martin</td>
<td><a href="mailto:martinwu@uiuc.edu">martinwu@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Yohn, Teri</td>
<td><a href="mailto:yohnt@georgetown.edu">yohnt@georgetown.edu</a></td>
<td>Georgetown University</td>
</tr>
<tr>
<td>Young, Mark</td>
<td><a href="mailto:markyoun@marshall.usc.edu">markyoun@marshall.usc.edu</a></td>
<td>University of Southern California</td>
</tr>
<tr>
<td>Zambon, Stefano</td>
<td><a href="mailto:zambon@economia.unife.it">zambon@economia.unife.it</a></td>
<td>University of Ferrara</td>
</tr>
</tbody>
</table>

WORKSHOP ORGANIZERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Rashad Abdel-khalik</td>
<td><a href="mailto:rashad@uiuc.edu">rashad@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Ira Solomon</td>
<td><a href="mailto:isolomon@uiuc.edu">isolomon@uiuc.edu</a></td>
<td>University of Illinois at Urbana Champaign</td>
</tr>
<tr>
<td>Martin Finegan</td>
<td><a href="mailto:mfinegan@kpmg.com">mfinegan@kpmg.com</a></td>
<td>KPMG LLP, U.S.</td>
</tr>
<tr>
<td>Bell, Timothy</td>
<td><a href="mailto:tbell@kpmg.com">tbell@kpmg.com</a></td>
<td>KPMG LLP, U.S.</td>
</tr>
<tr>
<td>Menon, Ram</td>
<td><a href="mailto:rammenon@kpmg.com">rammenon@kpmg.com</a></td>
<td>KPMG LLP, U.S.</td>
</tr>
<tr>
<td>Tolpa, Michael</td>
<td><a href="mailto:mtolpa@kpmg.com">mtolpa@kpmg.com</a></td>
<td>KPMG LLP, U.S.</td>
</tr>
<tr>
<td>Bullis, Pamela</td>
<td><a href="mailto:pbullis@kpmg.com">pbullis@kpmg.com</a></td>
<td>KPMG LLP, U.S.</td>
</tr>
</tbody>
</table>
APPENDIX 3

COLLABORATIVE GROUP SESSIONS

2nd BUSINESS MEASUREMENT RESEARCH WORKSHOP

Themes for Business Measurement Research

Generated by Workshop Participants
COLLABORATIVE GROUP SESSIONS

Selected details of major research themes that emerged during the collaborative sessions have been summarized/extracted/paraphrased from the written reports prepared by the groups.

The major research themes are broadly categorized as follows:

1. “Levels of Analysis” and “Measurement Issues”

An organizing framework for research in the business measurement domain could consist of three levels of analysis and three measurement issues. The three levels of analysis are:

- Measurement within the firm (organization);
- Measurement within an industry; and
- Measurement at inter-organizational-level (cross boundary activities).

Though extant research focuses predominantly on firm-level analysis, industry-level and inter-organizational-level (cross-boundary) analyses are becoming increasingly relevant in the rapidly changing competitive environment. Examples of important cross-boundary relations worthy of research include supplier-manufacturer relations, firm-regulatory body relations, joint ventures, and strategic alliances.

At each level of analysis, items to be measured and evaluated include:

- Constructs;
- Linkages among constructs and performance objectives; and
- Risk factors.

Examples of constructs include relatively easily measured items (such as number of complaints by customers) as well as more difficult-to-measure items (such as sales related to a specific advertising campaign, training program effectiveness, or statistical variances pertaining to these).

Linkages to performance objectives refer to tracing the effects of constructs to performance objectives. Linkages are relationships among outputs obtained by performing some activities using inputs. Measures of the constructs, the inputs and the outputs are needed to evaluate the linkage. Measurement of linkages among constructs and between constructs and performance objectives may either improve or contribute to the understanding of more effective managerial decision-making.

Finally, risk factors associated with strategic actions, such as risks associated with industry regulation, with the protection of property rights in joint ventures, with strategic alliances with suppliers, or with customers have been largely ignored in the current research on business measurement.

Measurement of constructs, linkages and risks should be analyzed at each of the three levels of analysis (see Figure).
## 2. Industry-Specific Research

Different factors impact a company’s selection of business measures for internal management purposes, and its choice of business measures for public disclosure. In many industries, norms seem to have developed about the type of financial and non-financial measures that should be used (for example: “same store sales growth” in the retail sector). Despite such norms, the question of standardization of related reporting practices remains open. Research into how such norms emerge over time and whether there is a role for standardization of such reporting practices appears to be promising.

It is, therefore, important to pursue empirical and theoretical research to understand what business measures different companies in different industries use, how they employ them, why they select them and when they begin reporting them. It is also important to understand related intra-organizational and intra-industry dynamics that drive their selection.
Research under this theme could involve detailed studies of selected industries followed by considerations of evidence documented across industries. Industry studies could explore how differences in capital markets influence public disclosures of business measures and how differences in cultures affect internal use of measures.

Potential research questions under an industry-specific research theme include:

- How do industry-wide business measurement practices evolve?
- How do best practices differ across organization types (for-profit and not-for-profit) and industries? And, if so, why?
- What are the drivers that lead to different Key Performance Indicators (KPI) for different industries?
- How do KPIs evolve over time? Are KPIs different when the industry is in its infancy compared to shakeout and maturity?

Increasingly, it is difficult to discern a single industry into which some organizations can be placed. In addition, even within a given industry, there can be rather divergent business models. Recognizing these realities, researchers may want to consider business measurement and business measurement research in terms of business models in addition to thinking in terms of industries.

### 3. Business Risk Measurement

Research around the measurement of business risk should consider focusing on:

- Factors (internal and external to the organization) that drive business risk and the weights assigned to different factors.
- Interdependencies among internal and external factors affecting business risk and the strength of interdependencies.
- Analyses at micro level (e.g. Networks, plant, and divisions within a firm) and macro (e.g. Organization) level.
- Examining impediments to the flow of information in assessing business risk.
- Examining the impact of users’ judgments on the provision of different types and forms of business risk information.

Potential research questions under this theme include:

- What measures are currently used for various types of risk? Some kinds of business risk (e.g., the possibility of major market-share gains or losses due to competitors’ successes or failures; risks of operating in politically unstable countries) are typically mentioned in the MD&A but not quantified for public reporting. Are they quantified internally and if so when and how?
- What are the effects on judgment and decision-making of different risk-measurement choices (both which risks to measure and how to measure them)?
4. Design of Measurement Systems

Potential research questions under this theme include:

- How do firms make cost-benefit tradeoffs in their measurement systems?
- How do organizations decide to make a change in their measurement system, and how is the new system then developed? What contextual and organization-structural factors determine the optimal and actual processes?
- How do organizations balance non-financial and financial measures and how do they use both types of information to manage?
- Are particular measures used more for facilitating decisions (relevance would be more important than reliability) compared to other measures used for control and performance measurement such as feedback?
- Does business measurement vary across different organizational designs? What are the most effective measures for each type of organizational design?
- What criteria should be used to determine what is “best practice” regarding performance measurement systems?
- To what extent is an effective cost management system a necessary condition for organizations to be successful?
- What is the role of size of the business and business measurement practices?

5. Designing & Validating Business Measures

Before trying to develop new business measures, researchers need to be sure that they are effectively employing measures that already have been formulated. Researchers should consider related disciplines (e.g., management and marketing) when developing business measures.

Measures must be validated for them to be useful. Standard methods of construct validity should be applied. Researchers testing business measures should understand the relevant business model and apply it in developing measures. Testing of new business measures should be done incrementally with respect to properly applied conventional accounting measures, whose properties are well understood. Researchers should consider whether sound theoretically justified measures should be used even if they cannot be tested.

Potential research questions under this theme include:

- What measures do firms collect/use? How extensively are they used? Why are some measures not used (what are the attributes of those measures)? How are the measures selected?
- Are the measurements time-dependent? Do they change with dynamically changing environments? How do organizations adopt their measurements to changing environments and to the most useful characteristics or factors?
- How do firms assess whether the information provided by a measure is adequate, usable, understandable, and important? (The answer obviously will depend on the objectives for
which the measurements were designed.) How do they prevent the measures from causing dysfunctionality?

- If firms use multiple measures, how do they weigh them (for example, for performance evaluation and reward purposes)?

- Under what conditions are conflicts among multiple uses of business measures particularly strong, and how are they optimally resolved? For example, using a measure to evaluate and reward managers may motivate them to distort the reported measure, reducing its value for strategic decision-making.

- How do firms combine/aggregate qualitative and quantitative measures? Are they comparable?

- What makes a business model “transparent” to both internal and external parties (e.g., managers and investors)? What properties of a measure make its implications for a business model “transparent” to the same parties? What tests can be devised to determine transparency?

- Validation of Business Measures:
  - What are the benchmarks to use to judge candidate measures?
  - What is the reliability of the candidate measures? Reliability will also include auditors’ ability to verify the measures. Ideally research would consider ways to add rigor and credibility.
  - Eventually the business measures must withstand a cost/benefit test. There may be business measures which would provide a modest benefit, but at a very substantial cost. (Cost should include out-of-pocket costs as well as implicit costs such as release of proprietary information).

- What business measures are used by venture capitalists to monitor entrepreneurial firms?

- How do firms monitor suppliers and contractors? What are the business measures that influence the choice of mechanisms such as outsourcing, and how are they monitored?