Measuring Performance of Internal Auditing: Empirical Evidence

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This article summarizes undertaken analysis of the performance measurement in the area of internal auditing. Reasons for choosing the mentioned topic were influenced by two main factors. First of all, performance measurement today is facing a considerable increase of interest in this subject due to a shift from industrial to knowledge economy. Well designed organizational performance measurement system enables effective translation of strategy into actions, multidimensional view of performance, and proper reaction to strategic issues, faced by the organization. Secondly, the role of internal auditing in overall managerial spectrum has significantly increased over the past 10 years. Currently, internal auditing represents not just a detective mean of control focused mainly on financial information and compliance (as it was on the early stages of its appearance), but rather a proactive function in organization, encompassing assurance and consulting services. Internal audit adds value through the usage of structured and systematic approach, enabling to evaluate and improve the effectiveness of risk management, control, and governance processes.

On the other hand, due to its specific position in organization and the nature of internal audit itself, measurement of this activity is a challenging issue. Following a formulated concept of “value added” approach of internal auditing, performance measurement in this area should reveal the effectiveness and the efficiency of internal audit services. Absence of the comprehensive and unified taxonomy has inspired undertaking a particular research in this field.

Results of the survey have highlighted the importance of the measurement of internal audit function to the stakeholders of internal auditing (audit committee, CEOs, other senior management and external auditors). Furthermore, survey results have supported the hypothesis that performance measures could be reasonably integrated into three identified dimensions of internal audit, i.e. input, process and output. Besides, it is worth mentioning that there is a strong correlation between performance measures, which could be / are used to measure particular dimensions of internal audit. This observation justifies the principle of interaction between dimensions and it is consistent with a general concept of cause-effect chain identified in contemporary performance measurement literature.

Keywords: internal audit, internal audit measures, performance measurement, performance measures, measurement of internal audit activity.

Introduction

A frequent expression of what cannot be measured, cannot be managed could be traced in the managerial literature. Managing of the performance is the main objective; however, performance measurement also constitutes one of the most important managerial functions. Traditional performance measurement, based on solely financial information, has been often criticized for its short-termism, sub-optimization, disregard of the strategy implementation and other noticeable shortcomings (Tangen, 2003). Considerable interest in performance measurement was associated not only with expressed general dissatisfaction with traditional performance measurement systems based on backward looking accounting information, but also led to the development of balanced or multi-dimensional performance measurement frameworks (Bourne et al., 2000). These changes led to the brand new concept of performance measurement (Mendibil, MacBryde, 2006).

The main reason of such transformations in this area is the shift from material assets to the knowledge based economy. Therefore, in order to avoid being fossilized and outdated process, performance measurement has to reflect the changing needs of organization’s stakeholders (customers, suppliers, investors, employees, regulators, etc.) and enable to manage organization’s strategic reaction to these challenges (Kennerley et al., 2003).

On the other hand, knowledge economy has transformed specialized, positioned and sophisticated contemporary organizations into information-dependant and knowledge-intense systems that critically demand for specific internal controls (Bou-Raad, 2000; Ramamoorti, 2003). Changed internal control landscape requires modern and challenging internal audit activity, which should be the main support function for its stakeholders (management, audit committee, external auditors, regulators, etc.). Furthermore, strong and contemporary internal audit function plays a proactive role in risk management process, which is a critical factor in company’s surviving practice (Walker et al., 2002). Expanded scope of services, nature and position of internal auditing demand for a new approach of measuring performance in this area. Significant amount of suggested performance measures could be identified at academic and practical literature. However, unstructured appliance of a set of performance measures does not lead to the systematic and disciplined approach of measuring performance of internal audit activity. Therefore, the main research question could be formulated as follows: “What dimensions of internal audit activity should be distinguished, in order to group
appropriate performance measures?”

The aim of this article is to investigate and analyze performance measurement trends in internal auditing and suggest commonly accepted solution to measure the internal audit activity. The object of the study is performance measurement in the area of internal auditing.

In order to realize the aim of this study comparative analysis of theoretical literature, review of published researches, quantitative data analysis and formulation of conclusions were employed. Empirical data was gathered through a structured internet survey. MS Excel and SPSS packages were used to analyze the survey data and apply statistical methods.

Performance measurement context

Managerial publications and even some particular sources of performance measurement literature are full with a number of different terms (e.g. performance measures, critical success factors, performance metrics, key performance indicators, etc.) that are used in order to express the idea of performance measurement concept. The performance measurement, performance measures and performance measurement system are the most often cited. Neely et al. (2005) provides the following definition of the mentioned terms:

- **Performance measurement** can be defined as the process of quantifying the efficiency and effectiveness of action.
- A **performance measure** can be defined as a metric used to quantify the efficiency and/or effectiveness of an action.
- A **performance measurement system** can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions.

As aforementioned, modern performance measurement concept significantly differs from the traditional concept of performance measurement, which was used some 20-30 years ago. Traditional performance measurement was mainly associated with financial management in the early 1980s, because it heavily relied on accounting information (Kaplan, Norton, 1996). However, due to the strategy alignment, multi-dimensional view of performance and other futures of modern approach, currently, performance measurement is treated as an interdisciplinary phenomenon that has a closely overlapping subject of interest with other managerial disciplines (strategic management, TQM, performance management, intellectual capital, etc.).

Neely et al. (2003) identify three stages of the development of performance measurement approach. At the first stage of the development of contemporary performance measurement approach in the early 1990s, new performance measurement frameworks, such as the Balanced Scorecard (Kaplan, Norton, 1996), Results and Determinants System (Fitzgerald, Moon, 1996), the Performance Prism (Neely et al., 2002) or Skandia’s Navigator (Edvinsson, Marlone, 1997), have appeared. These, such called, first generation (1G) approaches brought an additive of non-financial measures and broadened the perspective of the stakeholders. The second generation (2G) of performance measurement approach made a step forward by identifying the flow of value creation process and bringing strategy maps (Kaplan, Norton, 2000) or success and risk maps (Neely et al., 2002). Finally, the third generation (3G) approach of performance measurement encompasses requirements for linkage between financial measures to non-financial measures, intangibles and strategic control.

**Measures for internal auditing**

The development of performance measurement in internal auditing could be likened to overall progress in the organizational performance measurement context. As traditional organizational performance measurement was focused on financial results and accompanying accounting information, usually **hard** performance measures for internal auditing were oriented towards efficiency and effectiveness of internal audit function. However, evolution of organizational performance measurement determined much broader perspective of performance measurement at internal audit. Such transformation included a wider range of internal audit stakeholders and, accordingly, more identifiable dimensions, which required specific measures. Therefore, the number of usable performance measures has increased significantly (Ziegenfuss, 2000a; Burke, 2007; Morgan, 2007). Internal audit performance measures are not limited merely to a number of audit reports issued, duration of audit fieldwork, comparison of audits completed vs. planned, or actual hours spent during the engagement vs. planned, but rather include a set of comprehensive measures, such as average hours spent on trainings, average personnel experience, auditor education and certification levels, overlooked control weaknesses, applied best practice examples, number of management requests, percent of implemented recommendations, number of proposed process improvements, staff satisfaction survey, management and audit committee satisfaction survey, etc. (Haas, 2001; Frigo, 2002; Van Vijk, Holmes, 2006).

On the other hand, in some cases such a broad spectrum of possible performance measures may involve confusion and misunderstanding during the measurement process. For example, some authors (Dudley et al., 1999; Salierno, 2000) state that in many cases auditors’ experience and qualifications are obtained before joining the company; therefore, it is more reasonable to measure not the absolute value (e.g. years spend in industry, internal auditing, etc.) of particular dimension, but the efforts (i.e. what was done) towards increasing experience, qualification, competence, etc. Moreover, performance measures should not be analyzed and explored as “stand alone”, but integrated into a single performance measurement framework that ensures a multi-dimensional view of measured activity and enables identifying the flow of value creation.

**Underlying assumptions for adaptation of measurement frameworks**

The main feature of the current performance measurement era is a high number of performance measure-
ment frameworks that illustrate an evolution of performance measurement concept. Although all of them include a focus on non-financial and qualitative dimensions; however, their complexity and sophistication levels are different on a large scale. Such contemporary performance measurement frameworks may vary from simple and unsophisticated, such as Results and Determinants System (Fitzgerald, Moon, 1996; Brignall, Ballatntine, 1996) or Performance Measurement Matrix (Keegan et al., 1989) to complex and advanced frameworks, such as the Strategic Measurement and Reporting Technique – SMART (Lynch, Cross, 1991), the Balanced Scorecard (Kaplan, Norton, 1996, 2000) or the Performance Prism (Neely et al., 2002).

Of course there is no doubt that some of them are adopted in practice more often than others. Even though suffered a large portion of criticism, according to D.Rigby (2001), the Balanced Scorecard is the most popular performance measurement framework globally with a 44% adoption rate between organizations worldwide. Due to its flexible profile of four perspectives (learning and growth, internal business process, financial and customer) Balanced Scorecard became the most usable framework globally.

An internal auditing is no exception. A number of authors (Ziegenfuss, 2000b; Frigo, 2002; Cangemi, Singleton, 2003) or accounting companies (KPMG, 2004) claim Balanced Scorecard being the best solution to measure performance of internal auditors. On the other hand, as per survey results of Deloitte Touche Tohmatsu (2003), only a limited number of participants have developed balanced scorecard approach for the measurement of the internal audit activity. Furthermore, lack of other strong empirical evidence indicating the attractiveness of Balanced Scorecard among internal auditors rises discussion on what dimensions of internal audit activity should be measured.

In order to identify the dimensions of internal audit, fundamental design pattern Input-Process-Output was applied. Such approach was chosen not only because it perfectly reflects the concept of internal audit activity, but also enables employing the perception of cause-effect path, widely escalated in the context of contemporary performance measurement (Figure).

![Figure. Dimensions of internal auditing](image)

**Research methodology**

The research was designed to address the latter assumptions. The purpose of this research was to explore, investigate and analyze performance measurement trends in internal auditing and suggest commonly accepted solution to measure the internal audit activity. Structured online survey was used to obtain the empirical data. Invitations to participate in the survey were sent through the member exchange link on the web site of the Institute of Internal Auditors (www.theiia.org).

The measurement of internal auditing (and especially the added value, created by this function) is complex and multifaceted, since the internal auditing is somewhat diverse and different from company to company. Therefore, a research should reveal the general and common tendencies within the performance measurement at internal audit activity. It should also enable to justify the selection of particular performance measures and their integration into a single set that allows getting a picture of activity from a multi-dimensional perspective. Furthermore, the research should also comprise questioning the need for measuring internal audit as well; hence, background of measuring this activity should be also addressed.

Therefore, the first hypothesis was formulated as follows:

**H1:** Stakeholders of the internal auditing find the measurement of internal audit activity to be important.

In case the hypothesis is supported, the justification of performance measurement in internal auditing is obtained.

A diversity of performance measures used at internal auditing may be impressive, hence there should be an option of integrating them into specific dimensions. Conversely, such integration of measures should be supported by the statistical methods. Therefore, the second hypothesis was formulated accordingly:

**H2:** Performance measures could be reasonably integrated into particular dimensions of internal audit activity.

Performance measurement approach of the second generation (Balanced Scorecard, Performance Prism, etc.) implies identification the flow of added value throughout the measured activity. Consequently, the third hypothesis was formulated as:

**H3:** There is a correlation between dimensions of internal audit activity and their performance measures.

In order to test the abovementioned hypotheses, internal audit practitioners were surveyed about their perceptions, general conditions and practice, as well as their status of internal audit function at organization. Design of the employed survey included general and specific questions aimed to target common performance measurement trends in the area of internal auditing. Design of the survey is summarized in Table 1.

**Descriptive statistics**

In total, 113 respondents from a number of countries have replied, representing a global diverse community of internal audit professionals by location (North America – 71%, Europe – 15%, South/Latin America – 6%, Asia – 6%, Middle East – 2%), organization type (national –
50%, international -32%, global – 18%) and industry sector (financial services – 24%, energy – 21%, manufacturing – 12%, accounting and consulting – 9%, other – 34%). 102 surveys were suitable for further processing and analysis.

### Findings

The measurement of internal auditing should be important not only from the perspective of internal audit itself, but also seen as a key subject of interest among its stakeholders. Besides, such inspiration is justified by the survey results, summarized in Table 2.

In fact, answers of the respondents (Table 3) enable to state that, in general, stakeholders of internal audit activity find important the performance measurement within internal auditing.

### Design of the survey

<table>
<thead>
<tr>
<th>Organization (general)</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of organization, location, industry sector, number of FTE, financial figures, performance measurement framework used by the organization</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Audit Function (general)</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of internal audit function, number of auditors at organization</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Measurement of Internal Audit (general)</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance measurement framework applied for internal audit activity, reasons for measuring internal audit activity, importance of measurement viewed by the stakeholders, authority for directing performance measurement process</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Measurement of Internal Audit (specific)</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical usage and evaluation of represented internal audit function according to the listed performance measures</td>
<td></td>
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</tbody>
</table>

The major part (i.e. 87%) of surveyed internal auditors represents an in-sourced function, while the rest of them (13% of respondents) from time to time use outside consultants and engage into co-sourced audits.

According to the survey results, 44% of respondents simply utilize KPIs, 31% of them use internally developed framework, 12% apply Balanced Scorecard, 3% employ Value for Money / Business Process Model, 10% use other frameworks (such as Six Sigma and others). The mentioned results also support the idea that although the adoption of Balanced Scorecard is widely recommended, it is not very popular between internal auditors.

Primary reasons for using performance measures within internal audit activity are summarized in Table 2.

As we can see from the table above, the main reason (52.94%) of using performance measures within internal auditing is to assure that internal audit activity will be managed and controlled efficiently and effectively. Other major reasons include ensuring compliance with International Standards for the Professional Practice of Internal Auditing (that require ongoing supervision and monitoring of activity) and intention to demonstrate value of internal auditing.

### Primary reasons for using performance measures

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent, %</th>
<th>Response, total</th>
</tr>
</thead>
<tbody>
<tr>
<td>To ensure compliance with Standards on Internal Auditing</td>
<td>43.14</td>
<td>44</td>
</tr>
<tr>
<td>To align operations with strategy</td>
<td>9.80</td>
<td>10</td>
</tr>
<tr>
<td>To comply with organizational policy, procedures, etc.</td>
<td>9.80</td>
<td>10</td>
</tr>
<tr>
<td>To assure that internal audit activity will be managed and controlled efficiently and effectively</td>
<td>52.94</td>
<td>54</td>
</tr>
<tr>
<td>To demonstrate the value of internal audit activity</td>
<td>40.20</td>
<td>41</td>
</tr>
<tr>
<td>To assure the quality of internal audit activity</td>
<td>36.27</td>
<td>37</td>
</tr>
<tr>
<td>To motivate employees of Internal Audit Unit</td>
<td>6.86</td>
<td>7</td>
</tr>
<tr>
<td>To support accountability</td>
<td>19.61</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>26.47</td>
<td>27</td>
</tr>
</tbody>
</table>

### Importance of internal audit measurement viewed by the stakeholders of internal auditing, as per surveyed internal auditors (cumulative frequencies, %)

<table>
<thead>
<tr>
<th>Importance*</th>
<th>Board / Audit comm.</th>
<th>CEO</th>
<th>Other senior mgmt.</th>
<th>External audit</th>
<th>Other stakehold.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2</td>
<td>5.9</td>
<td>5.9</td>
<td>14.7</td>
<td>11.7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>18.6</td>
<td>11.8</td>
<td>32.4</td>
<td>29.4</td>
<td>23.5</td>
</tr>
<tr>
<td>4</td>
<td>69.1</td>
<td>54.8</td>
<td>73.5</td>
<td>52.9</td>
<td>58.7</td>
</tr>
<tr>
<td>5</td>
<td>90.1</td>
<td>93.0</td>
<td>86.3</td>
<td>70.6</td>
<td>67.6</td>
</tr>
<tr>
<td>N/A</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Where 1 means absolutely not important and 5 means very important.
Since the major part of internal audit clients (except other stakeholders) find the measurement of internal audit performance more or less important, **Hypothesis 1** is supported. This means that internal auditors feel that the measurement of their performance is a subject of interest not only to them, but also to a broad range of their stakeholders. Relatively low rate of importance among other stakeholders could be explained by the superficial action between internal auditors and other stakeholders (such as clients, suppliers, regulators, etc.).

In order to structure the population of performance measures used within internal audit, a comparative analysis of published sources (Ziegenfuss, 2000a, 2000b; Frigo, 2002; Haas, 2001; Van Vijk, Holmes, 2006), bulletins of accounting companies (KPMG, PriceWaterhouseCoopers, Deloitte Touche) and other databases (e.g. Global Audit Information Network – GAIN) was used. Such analysis allowed creating a comprehensive list of most internal audit measures that could be used within internal audit, eliminate duplicates and group them by appropriate dimensions. In total 30 performance measures were listed in the survey.

Possible performance measures, obtained through a comparative literature analysis, were grouped according to the identified dimensions of internal auditing. Respondents were asked to evaluate their internal audit shops (units) according to the given performance measures. Cronbach’s alpha (Cronbach \( \alpha \)) coefficient was applied in order to test the reliability of performance measures for each dimension. Results of these statistics are summarized in Table 4.

<table>
<thead>
<tr>
<th>Dimension (( \alpha ))</th>
<th>Performance measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input ( (\alpha = 0.7233) )</td>
<td>Average trainings per auditor, percentage of certified auditors, experience in internal auditing, experience in industry, level of modern technologies used, level of best practice applied</td>
</tr>
<tr>
<td>Process ( (\alpha = 0.8403) )</td>
<td>Spectrum of internal audit services, time to address management requests, deviations from engagement plan, completed vs. planned audits, chargeability rate, average duration of the audit, number of audit reports per year, number of process reengineering</td>
</tr>
<tr>
<td>Output ( (\alpha = 0.7254) )</td>
<td>Number of management requests, auditee satisfaction level, percentage of recommendations implemented, role of internal auditing viewed by the audit committee and senior management</td>
</tr>
</tbody>
</table>

The table above statistically proves the reliability of chosen integration scenario and supports the hypothesis that performance measures could be reasonably integrated into particular dimensions of internal audit activity.

Finally, the correlation analysis was performed at this phase of the research. The phrase that “correlation does not imply or mean the causation” is often used in many sciences; however, saying that “correlation does not suggest causation” is also false. Due to this reason we might assume that a strong correlation often suggests or increases the probability of causal relationships between variables (Tuft, 2006). Although survey results have revealed correlations between the measures assigned to different dimensions as well as correlations within a single dimension, only the former correlations will be discussed further, considering the 3rd hypothesis.

The usage of Pearson’s correlation revealed a strong correlation \( (R = 0.743, p<0.001) \) between the auditors training hours and applied best practice examples during the audit process. Auditors training hours also correlate with audit process innovations \( (R = 0.709, p<0.001) \) and applied modern technologies \( (R = 0.789, p<0.001) \). Since the percentage of certified auditors is influenced by their knowledge and experience, which is required to obtain professional certification, a strong correlation was identified between this measure and deviations from engagement deadlines \( (R = 0.737, p<0.001) \) as well as number of audit reports issued during the year \( (R = 0.704, p<0.001) \). Besides, average personnel industry experience directly correlates \( (R = 0.786, p<0.001) \) with a number of process reengineering proposed by internal auditors.

Further analysis disclosed correlation \( (R = 0.758, p<0.001) \) between applied best practice examples and percentage of implemented recommendations. This relationship could be explained through a positive influence of applied best practice examples as well as the auditors’ ability to marketing them.

Needed to say that spectrum of internal audit services correlates with a number of management requests \( (R = 0.725, p<0.001) \). For this reason we might say that management is prone to involve internal auditors more often when the latter have a broader spectrum of proposed services. Accordingly, the status of internal audit at organization viewed by the senior management correlates with percentage of implemented recommendations \( (R = 0.769, p<0.001) \). Furthermore, also the status of internal audit viewed by the senior management and the audit committee correlates considerably \( (R = 0.740, p<0.001) \).

The abovementioned correlations support the 3rd hypothesis. This means that there is a strong correlation between the measures allocated to different dimensions of internal audit activity. Accordingly, this implies identification of the value creation flow at different phases of activity, i.e. auditors are trained properly and gain experience, and this positively influences the audit process (work is done more effectively, auditors provide more reasonable recommendations etc.), satisfaction of audit stakeholders, and, finally, the status of internal audit function.

**Conclusions**

The following conclusions could be drawn from the performed research:

- Performance measurement has crossed the borders of financial management and became an inter-
disciplinary subject that is on the radar of business practitioners as well as academic scholars.

- Performance measurement in internal auditing is no exemption. The importance of soft measures in overall measurement process has increased significantly.
- Due to the lack of a strong evidence favorable to adaptation of certain performance measurement framework (e.g. balanced Scorecard), fundamental design pattern Input-Process-Output was proposed to measure performance of internal auditors.
- An internet survey was performed among internal auditors, in order to explore, investigate and analyze performance measurement trends in internal auditing and suggest commonly accepted solution to measure the internal audit activity. Three hypotheses were formulated in order to address the aim of the survey.
- Results of the survey support the 1st hypothesis that stakeholders of internal audit activity (audit committee members, CEOs, other senior management, external auditors) find measurement of the mentioned activity more or less important. Fairly low rate of importance among other stakeholders (such as regulators etc.) could be explained by the superficial interaction between them and internal auditors.
- The reliability of chosen integration scenario, when performance measures were grouped according to the identified dimensions of internal audit activity, was statistically proved by the values obtained through a usage of Cronbach α. Calculated values of Cronbach α (0.7233, 0.8403 and 0.7254 accordingly) support the 2nd hypothesis.
- A strong correlation (0.725 ≤ R ≤ 0.789; p = 0.001) between performance measures assigned to different dimensions of internal audit indicate that there is a certain relationship between the identified measures. This also supports the 3rd formulated hypothesis.

References

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Vidaus auditо veiklos vertinimas: empiriniai įrodymai

Santrauka

Šiame straipsnyje pateikiamai atlikta veiklos vertinimo vidaus auditо srityje analizė. Straipsnio temos pasirinkimą nulėmė kei vienikų. Pirmiausia išsiaiškinti veiklos vertinimo dimensijas ir tiek strateginius, tiek praktinius veiklos vertinimo veiksnius. Kitur tyrimų perspektyva labiausiai, kad veiklos vertinimo srityje būtų atsidarytas atsakingas durys, kuriai būtų kaltinama, kad ūkinių veiksnų veiklos vertinimo srityje būtų aptinkama ir tobulinama organizacijos veikla. Šiame straipsnyje pateikiamos empirinės tyrimų rezultatai, kurių pagrindu yra išsamūs duomenys, rinkti, apdoroti bei analizuoti. Tarkim, kaip egzistuoja veiklos vertinimo principai, veiksniai, įtvirtinti sąlygos ir t. t. Tada paaiškėjus, kaip veiklos vertinimo principai veikia veiklos vertinimo srityje, galima patikrinti, ar jos tinkamai apibrėžti patirtį.