DuPont Drives Continuous Improvement With COBIT 5 Process Assessment Model

By James F. Aliquo Jr., CISA, CRISC, and Zhiwei Fu, Ph.D., CISA, CRISC, CGEIT, CFE, PMP

Over time, business has increasingly advanced the application of IT to meet ever-changing business needs and regulatory requirements. A systematic and continuous improvement program is needed now more than ever to help businesses assess IT management capabilities; identify strengths, weaknesses and risk factors with respect to business requirements; and implement process changes to enhance services and operations needed to meet stakeholder and business needs. In essence, continuous improvement helps an organization focus on “doing things right” and continually improving its effectiveness and efficiency.

To successfully meet this need, DuPont recognized that it must leverage a robust, dependable process assessment framework to drive its continuous improvement program. The COBIT® 5 process assessment model (PAM) is evidence-based and enables a reliable, consistent and repeatable assessment in the area of governance and management of enterprise IT (GEIT) to support continuous process improvement (the COBIT Assessment Programme). Accredited training organizations deliver training on the assessment approach, and an assessor certification, COBIT 5 Certified Assessor, is available from ISACA.

DuPont had successfully applied the COBIT framework for its IT process management, governance and audit compliance over a period of years and, therefore, decided to use the COBIT® 5 PAM. IBM Global Business Services, a premier consulting service provider that has broad knowledge of COBIT implementation, deep expertise in enterprise IT process management and governance, and extensive experiences in both private and public sectors, was asked to perform an independent process capability assessment for DuPont.
Background on DuPont

E. I. du Pont de Nemours and Company, commonly referred to as DuPont, is a Fortune 500 American chemical company. DuPont's vision is to be the world’s most dynamic science company, creating sustainable solutions essential to a better, safer and healthier life for people everywhere. For more than 200 years, DuPont has served markets as diverse as agriculture, nutrition, electronics and communications, safety and protection, home and construction, transportation, and apparel. Over the years, DuPont has advanced to become a world leader in market-driven innovation and science. It has brought world-class science and engineering to the global marketplace through innovative products, materials and services, and introduced thousands of new products and patent applications every year. The DuPont information sciences and IT organization provides globally-integrated communication, information services and computing infrastructure that enables the enterprise to provide solutions for the world’s most urgent needs, and more important, uses information and technology for a competitive advantage, fueling business growth for the company.

Establish the COBIT 5 PAM Assessment

The COBIT 5 PAM is an ISO/IEC 15504-based process capability assessment model that incorporates COBIT 5 as the process reference model (PRM) for base requirements and ISO/IEC 15504 as the basis for the measurement framework to determine capability levels.

COBIT 5 brings together its five key principles that allow enterprises to build an effective governance and management framework, and a holistic set of seven enablers that help enterprises optimize information and technology investment and use for the benefit of stakeholders. Furthermore, COBIT 5 enables information and related technology to be governed and managed in a holistic manner for entire enterprises, taking in the full end-to-end business and functional areas and considering the IT-related interests of internal and external stakeholders. The COBIT 5 principles and enablers are generic and useful for enterprises of all sizes, whether commercial, not-for-profit or public-sector.

The ISO/IEC 15504 standard identifies management process assessment as an activity that can be performed either as part of a process improvement initiative or as part of a capability determination approach. The purpose of process improvement is to continually improve the enterprise’s management effectiveness and efficiency, and the purpose of process capability determination is to identify the strengths, weaknesses and risk factors of selected management processes with respect to a particular, specified requirement through the processes used and their alignment with business needs.

Leveraging ISO/IEC 15504, in conjunction with the widely accepted COBIT framework for GEIT, makes the COBIT 5 PAM the basis for a robust, dependable and scalable assessment approach. Figure 1 illustrates the high-level architecture of the COBIT 5 PAM.

The COBIT 5 PAM is composed of process and capability dimensions, a set of process performance indicators that are specific for each process and used to determine whether a process is at capability level 1, and a set of generic process capability attribute indicators which apply to capability levels 1 to 5. The process capability attribute indicators are generic for each process attribute and used as a basis for collecting objective evidence that enables process capability ratings to be determined. The process dimensions of the PAM use the COBIT 5 PRM, where the governance and management processes are defined in a life cycle and classified into process categories with an architecture describing the relationship among the processes. The capability dimension provides a measure of a process’s capability to meet the

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current or projected business goals for the enterprise process, expressed in terms of nine process attributes grouped into five capability levels. Figure 2 illustrates the two-dimensional COBIT 5 PAM with the PRM as the process dimension and the ISO/IEC 15504 measurement framework as the capability dimension.

The COBIT 5 PRM subdivides the IT-related processes, practices and activities of the enterprise into two main areas, governance and management. Governance ensures that stakeholders’ needs, conditions and options are evaluated to determine balanced, agreed-upon enterprise objectives to be achieved, setting direction through prioritization and decision making, and monitoring performance and compliance against enterprise objectives. Management ensures that the plan, build, run and monitor (PBRM) IT management activities are executed in alignment with the direction set by the governance body to achieve the enterprise objectives.

Figure 2—The Capability and Process Dimensions of the PAM

The PAM process capability levels begin from level zero (incomplete process), to level one (performed process) and then to level two (managed process), which generally represent the instance view of an individual program or project. At level two, the base management practices are performed in a managed fashion (planned, monitored and adjusted) to achieve the process purposes, with work products appropriately established, controlled and maintained. Process capability levels three (established process), four (predictable process) and five (optimized process) represent the enterprise view of the corporate capability for a process, where a standard enterprise-level process is deployed and operated with defined limits to achieve its process outcomes and continuously improved to meet relevant current and projected business goals. The COBIT 5 PAM assessment evaluates if and how well specific process attributes for each process level are achieved, and provides a level of confidence in the assessment results that indicates the overall capability of management processes. A rating that indicates the level of achievement is assigned accordingly, based on objective and validated evidence for each process attribute. The capability level of a process is determined on the basis of the achievement of specific process attributes according to ISO/IEC 15504, i.e., whether the process attributes at that level have been largely and fully achieved and whether the process attributes for the lower level have been fully achieved.

Plan and Scope the COBIT 5 PAM Assessment

Diligent assessment planning and proper scoping was critical to the success of the COBIT 5 PAM assessment at DuPont. This involved identifying relevant DuPont business drivers and associated stakeholder needs for the process assessment, selecting the target processes that would be included in the scope of the assessment, identifying any relevant constraints, selecting the assessment participants and the assessment team, and defining their respective roles and responsibilities. DuPont and IBM collaborated with the relevant stakeholders and determined the assessment scope, the management processes to be assessed, assessment constraints and participants, and the type of assessment to be executed (class two). Based on the assessment scope and requirements, IBM established a PAM assessment team with competent and certified assessors, independent from the organizations performing the management processes.

It was integral to the assessment planning and scoping that the assessment team identified and reviewed DuPont business and regulatory requirements and developed various diagnostic tools, assessment templates, guidelines and procedures to ensure assessment standardization and consistency across the processes assessed. There were a number of assessment tools and templates developed and applied by the assessment team that effectively addressed assessment and stakeholder needs. The assessment team managed the assessment plan, scope and schedule through constant tracking and continual communication with DuPont leadership and associated stakeholders. All assessment statuses and issues, changes and updates were identified and communicated in a timely manner to the appropriate DuPont stakeholders for proper action.

Perform the COBIT 5 PAM Assessment

The COBIT 5 PAM assessment was carried out based on the assessment class (class two) and assessment scope chosen by DuPont management (in accordance with the Assessor Guide: Using COBIT 5®) with the goal of determining if the management processes at DuPont have met the business needs and regulatory requirements, achieved the process purposes, applied good practices, managed the life cycle of the processes, and produced appropriate work products. There were a number of assessment techniques developed and applied in the process assessment, including:

- Management diagnostics and awareness assessment
- Management questionnaires and checklists to confirm findings
- Sampling techniques to determine whether process outcomes have (or have not) occurred
- Management statements corroborated by customers and other assurance sources
- Staff interviews to assess their knowledge, competency, awareness and behaviors
- Process, policy and standard operating procedure reviews
- Process instances and sample data identified, collected and reviewed
- Sample processes, procedures, meetings and reviews observed and walked through

Leveraging the appropriate assessment techniques developed by the IBM assessment team, in conjunction with DuPont support, the team conducted extensive process management reviews and interviews with internal and external stakeholders. The assessment team confirmed that evidence and artifacts collected from various sources were sufficient and objective, and ensured that the data as a whole were consistent with the requirements of the class and scope of the assessment. The in-depth analysis and validation of the supporting evidence and artifacts were thereafter performed to evaluate if the base management practices existed for the management processes; whether these practices achieved the process purpose and outcomes; and how well or poorly the management processes performed, which led to the establishment of the DuPont process profiles and recommendations for continuous improvement.
Develop and Communicate the Assessment Results

The results of the assessment were analyzed and reported in a detailed assessment report, which included an overall assessment approach and analysis, a determination of the current capability level, key issues (such as observed weaknesses in process capabilities and opportunities for improvement), and recommendations for process improvement. The detailed assessment report was provided to the DuPont assessment sponsor upon completion of the assessment workload. A high-level management summary and executive briefing were also provided in the form of a presentation to the DuPont leadership team. The process capability profiles and improvement road map were also properly established for the assessed management processes, with the key issues analyzed, capability gaps incorporated and target levels provided for respective processes. Figure 3 illustrates the mock-up of the DuPont specific, measurable, actionable, realistic and time-bound (SMART) improvement road map for continuous improvement.

Implement Continuous Improvement Road Map

The continuous improvement of the management processes capabilities through their life cycle goes beyond simply remediating or mitigating these identified process issues or weaknesses. Rather, continuous improvement efforts need to be closely aligned with enterprise business objectives and risk tolerances and managed holistically across the enterprise with appropriate strategy, priority and resources using the seven COBIT 5 enablers. The DuPont governance organization ensured that the target capability levels for the processes be set in alignment with strategic vision and business objectives of IT, for the balance of optimal business value, risk levels and resource use, and that management execution of the process improvement road map with defined roles and responsibilities be performed and governed continually through its life cycle. Figure 4 illustrates the continuous improvement landscape with the seven COBIT 5 enablers.
Conclusion
Businesses have been continually enhancing their process capabilities to address complex and dynamic business challenges. To that end, it is critical to adopt a robust process assessment framework, perform a reliable assessment for internal reporting, and establish a sound and solid basis for capability determination and continual process improvement. Furthermore, it is generally understood that the higher the process capability, the lower the risk of the process failing to meet its intended purpose, and that the higher the capability, the more costly the process is to operate. This case study presents a process capability assessment with the COBIT 5 PAM for a Fortune 500 company. This COBIT 5 PAM assessment has helped DuPont establish appropriate process baselines and a well-balanced SMART improvement road map to continually enhance its information and technology capability for a competitive advantage and fuel business growth for the company. The COBIT 5 PAM is based on an ISO standard for an evidence-based process capability assessment that, if properly implemented, can greatly benefit enterprises of all sizes, whether commercial, not-for-profit or public-sector.

Acknowledgments
The authors wish to recognize Eric Mittnight, Michael T. Clark, John W. Lainhart, Christopher M. Ballister, James L. Golden and Jose Martinez of IBM and Dana F. Ormerod of DuPont for their exceptional contributions to the COBIT 5 PAM assessment at DuPont and the development of this case study.

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Audit Update

Recently Released COBIT 5 Materials

- **Vendor Management: Using COBIT 5**
- **Risk Scenarios for COBIT® 5 for Risk**
- **Controls and Assurance in the Cloud: Using COBIT® 5**
- **COBIT® 5 online: Access to publications in the COBIT 5 product family and to other non-COBIT, ISACA content and current, relevant GEIT material**

For more information on COBIT publications, visit the COBIT 5 page of the ISACA web site.

COBIT 5 translations are available on the COBIT Product Family page.

ISACA, COBIT® 5 for Assurance, USA, 2013
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Is the global controls and compliance manager for the information technology and process (ITP) function at DuPont. Aliquo has designed and implemented many of the IT risk processes being used in DuPont’s ITP function. He is a strong proponent of the incorporation of COBIT, more specifically, the maturity modeling aspects and their usefulness in relation to comprehensive process execution and analysis.

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Is the senior principal of governance, risk and compliance (GRC) and cybersecurity at IBM Global Business Services. He has an extensive background in designing, implementing and assessing governance and compliance programs and IT controls in various industries and third-party service organizations. He is a renowned researcher and practitioner in business analytics, modeling and optimization, performance measurement, and process improvement, with multiple publications in international journals, book series and conference proceedings.

Endnotes

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Navigate COBIT 5 in the New COBIT Online

By John W. Lainhart IV, CISA, CISM, CGEIT, CRISC

COBIT® 5 online will offer a greatly enhanced user experience with its launch in the third quarter of 2014. The new online version of COBIT will give users the ability to navigate the COBIT® 5 product family, including COBIT® 5, COBIT® 5 Implementation, COBIT® 5: Enabling Processes, COBIT® 5: Enabling Information, COBIT® 5 for Assurance, COBIT® 5 for Information Security and COBIT® 5 for Risk.

In addition to gaining online access to these materials, users will be able to browse news and other ISACA® articles related to COBIT®. Users will be able to post feedback within the content on which others can then remark or simply take advantage of while browsing COBIT. This real-time exchanging of knowledge and experience will allow users to share their expertise across all geographical and industrial borders.

Users who have purchased additional publications within the COBIT 5 product family will be able to access those publications, or download them, in their unique instance of COBIT online. Future versions of the site will include a tool set to create an individualized goals cascade and responsible, accountable, consulted and informed (RACI) charts for each governance and management practice. Watch the COBIT 5 Online page of ISACA’s web site for updates.

John W. Lainhart IV, CISA, CISM, CGEIT, CRISC

Is the US public sector cybersecurity and privacy service area leader for IBM Global Business Services. He is past international president of ISACA and a member of ISACA’s Framework Committee and the COBIT 5 Task Force. He has been a member of the IT Governance Committee, where he worked on COBIT® and Val IT® and Risk IT® initiatives.
Is COBIT 5 Process Implementation a Wicked Problem?

By Joao Souza Neto, Ph.D., CGEIT, CRISC, Certified COBIT Assessor, Carlos Henrique de Luca Ribeiro, COBIT(F), and Diana Santos

“Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them.”¹

Extremely complex problems such as environmental degradation, obesity, climate change, indigenous inclusion, terrorism, poverty and religious conflicts are often called wicked problems. The concept of a wicked problem was first introduced by Charles Churchman, but Horst Rittel and Melvin Webber, urban planners at the University of California, Berkeley (USA) first raised the approach of social processes for solving complex problems, as opposed to the cognitive styles of professionals based on a Newtonian mechanistic view.²,³

Not all problems are wicked. Wicked problems have to be differentiated from common problems or tame problems. Unlike a wicked problem, a tame problem is one where the traditional thinking, cognitive studies and current methods of project management indicate that the best way to tackle it is to follow a top-down process—an orderly and linear approach—working from the problem down to the solution.⁴ This logic is usually sufficient to achieve a feasible solution in a reasonable period of time by collecting and analyzing data and identifying the requirements to specify the problem. Then, the manager will be able to formulate and implement a solution. Thus, the cascade model (waterfall) is indicated for tame problems because they have a linear solution pattern recognized in project management literature with widespread use by the software industry.

A problem may have characteristics of tame or wicked problems (figure 1), which does not mean that the award of the degree of wickedness is binary, given that most problems have different degrees of complexities. The existence of problems spread in a spectrum outlines the limits and the interval between tame and wicked problems.⁵

Results and Discussion

The 10 characteristics of wicked problems are described and evaluated for COBIT 5 implementation in figure 1.⁶,⁷,⁸

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<thead>
<tr>
<th>Characteristics of Wicked Problems</th>
<th>Evaluation for COBIT 5 Implementation</th>
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<tr>
<td>1. There are a large number of stakeholders.</td>
<td>COBIT 5 processes have a large number of stakeholders. Figure 2 shows the number of responsible, accountable or consulted stakeholders who take part in every process, out of a total of 26 stakeholders listed.⁹ (The informed stakeholders were not included because this role was considered passive.) Besides the large number of stakeholders involved in most of the processes, the management of stakeholders with such different backgrounds, interests, goals and responsibilities poses a complex challenge for COBIT 5 implementation.</td>
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<td>2. Context is constantly changing.</td>
<td>The business and IT processes are very dynamic, demanding constant adaptation. “Frameworks, best practices and standards are useful only if they are adopted and adapted effectively. There are challenges that must be overcome and issues that must be addressed if governance of enterprise IT (GEIT) is to be implemented successfully.”¹⁰</td>
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<tr>
<td>3. There are no right or wrong solutions to the problems.</td>
<td>COBIT 5 does not suggest that there exists a unique solution for GEIT problems. Each implementation should be tailored to the needs of the organization. If an organization decides not to implement a particular process, this is not wrong nor right; it is just adequate.</td>
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<td>4. There is no consensus about the</td>
<td>Every IT governance problem can be tackled in more than one way and this is</td>
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solution to a problem. strongly dependent on managers’ experiences and backgrounds. “Every enterprise will apply its own specific plan or road map, depending, of course, on factors such as its industry and business environment and its culture and objectives.”

5. Wicked problems have no stopping rule. “The implementation and improvement programme is typically a continual and iterative one. During the last phase, new objectives and requirements will be identified and a new cycle will be initiated.”

6. There is no definitive formulation of a wicked problem. The choice of explanation determines the nature of the problem’s resolution. “Many factors may indicate a need for new or revised GEIT practices. It is, however, important to note that these symptoms may not point only to underlying issues that need to be addressed, but could also be indicative of other issues (or a combination of factors). For example, if business has the perception that IT costs are unacceptably high, this may be due to governance and/or management issues (such as the inappropriate criteria being used in the IT investment management process), but it could also be due to a legacy of underinvestment in IT that now manifests in significant investments being required.”

7. Every wicked problem is essentially unique and novel. “The implementation of GEIT for each enterprise will, therefore, be different and the context needs to be understood and considered to design the optimal new or improved GEIT environment.”

8. The problem is not understood until a solution has been developed. When a solution is implemented, it exposes new aspects of the problem, requiring adjustments of the potential solution. The problem is an ill-structured, evolving set of interlocking issues and constraints. “The implementation and improvement programme is typically a continual and iterative one. During the last phase, new objectives and requirements will be identified and a new cycle will be initiated.” Moreover, the problem will vary; according to the interlocutor; different stakeholders (there are many listed in COBIT 5) have different views about what the problem is and what constitutes an acceptable solution.

9. Every solution to a wicked problem is a “one-shot operation”; because there is no opportunity to learn by trial and error, every attempt counts significantly. “One cannot build a freeway to see how it works.” This is the difficulty about wicked problems: You can’t learn about the problem without trying solutions, but every solution you try is expensive and has lasting unintended consequences that are likely to spawn new wicked problems.” The same happens when IT governance is implemented; to know the context, the company and the stakeholders, one has to start somewhere and evolve from there.

10. Wicked problems have no given alternative solutions. “There may be no solutions, or there may be a host of potential solutions that are devised, and another host that are never even thought of. Thus, it is a matter of creativity to devise potential solutions and a matter of judgment to determine which are valid, which should be pursued and implemented.” Once more, different stakeholders have different views about what the problem is and what constitutes an acceptable solution. Therefore, naturally, there will be a large group of potential solutions.

Using these characteristics to study practices of IT governance at the Brazilian Federal Public Administration in the spectrum of the wickedness of problems, it was found that the first two characteristics listed in figure 1 are particularly wicked in the IT governance context.

Figure 2 shows, for each COBIT 5 process, how many stakeholders are listed either as responsible, accountable or consulted. The numbers vary from seven to 24 stakeholders, which indicates that this is indeed a matter to be taken into consideration.

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<tr>
<th>COBIT 5 Processes</th>
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<td>EDM01</td>
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<td>APO06</td>
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<td>BAI03</td>
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<td>EDM02</td>
<td>18</td>
<td>APO07</td>
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<td>EDM03</td>
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<td>APO08</td>
<td>18</td>
<td>BAI05</td>
<td>21</td>
<td>DSS05</td>
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Conclusion
The implementation of COBIT 5 governance and management processes proved to have many characteristics of a wicked problem. Therefore, managers in charge of the implementation should be aware that dealing with this kind of problem needs innovative, collaborative and comprehensive solutions that take into consideration the various elements of GEIT and the aspects related to wicked problems and social complexities.

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Has more than eight years of experience in IT governance, applying COBIT within Brazil Post. He is also responsible for the IT governance research area in the Universidade Católica de Brasília. He is founder and educational director of the ISACA Brasilia (Brazil) Chapter.

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Plans for the Future: COBIT 5 Growth Strategy
By Robert E. Stroud, CGEIT, CRISC

In 2013, the COBIT Growth Strategy Task Force identified key activities and deliverables to increase adoption and use of COBIT® 5. These activities were defined through the expertise of the task force as well as through more than 35 interviews of current and prospective COBIT 5 users. As a result of this work, several new COBIT 5 initiatives are underway with delivery dates in 2014 and 2015.

Projects in development include:
- A benchmarking study to demonstrate the business value achieved by applying governance and management practices defined in COBIT 5
- White papers that cover how COBIT® can be used with other frameworks and standards
- A tool, “Getting Started With IT Governance,” for individuals new to COBIT 5 concepts
- A goals cascade tool, which will be delivered as part of COBIT 5 online
- A new COBIT 5 marketing campaign focused on how COBIT 5 can help address business problems
- Guidance for executives on the benefits COBIT 5 can bring to their enterprise

Other activities have also been identified and will be shared with the COBIT 5 community as development begins. Updates will be featured in COBIT Focus and the COBIT 5 page of the ISACA® web site.

Robert E. Stroud, CGEIT, CRISC
Is the vice president of strategy and innovation at CA Technologies, the incoming international president of ISACA for 2014-15, and a member of ISACA’s Professional Influence/Advocacy Committee. Stroud spent more than 15 years in the finance industry successfully managing multiple initiatives in both the IT and retail banking sectors related to IT service management and process governance. He joined CA Technologies from the Australian computer security company Cybec, where he was responsible for the company’s successful global expansion, including entry into the North American market.

Strategic Planning Using COBIT 5
By Shahid Ali, Ph.D., CGEIT, CISSP, ITIL Expert, PMP, TOGAF 9 Certified

Strategic planning is an important component of strategic business management. It results in long-term planning for and future direction of an enterprise at a strategic level. If a strategic planning exercise is done for the first time, it results in setting the vision, mission and values for the enterprise. Strategic planning cycles can vary from three to five years and are industry-dependent. For a set vision and mission, the goals are normally reviewed and revised from one cycle to another. Every strategy cycle results in new or updated goals to achieve the vision of the enterprise. The strategy implementation phase deals with the delivery of the set strategic goals. The following is a step-by-step approach to the strategic planning activity using COBIT® 5 guidelines.

The COBIT 5 framework is a comprehensive and coherent set of guidelines for the governance and management of enterprise IT (GEIT) with insight into establishment of and alignment with strategic planning. Since the business or enterprise strategy is different from the IT strategy, the concept of strategic alignment refers to the need for alignment between business strategy and IT goals and processes. The COBIT 5 product family is comprised of a set of guides including the framework guide, the enabler guides and the professional guides. Since COBIT 5 is inherently based on five core principles that include meeting stakeholder needs, covering the enterprise end-to-end, applying a single integrated framework, enabling a holistic approach and separating governance from management, strategic planning guidance is provided throughout the entire
framework and supporting materials to ensure that these principles are achieved. A summary of the strategic planning guidance discussed throughout the article is provided in figure 1 with reference to the COBIT 5 product family.

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<tr>
<th>COBIT 5 Product Family</th>
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<tr>
<td>COBIT 5 framework</td>
<td>Generic enterprise goals</td>
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<td>Goal cascade for strategically aligning goals at all levels</td>
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<td>Governance objectives (guidance and mapping)</td>
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<td>IT generic goals</td>
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<td>Mapping between IT strategic goals and enterprise strategic goals</td>
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<td>COBIT 5 enabler guides</td>
<td>Enabler goals</td>
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<td></td>
<td>Guidance on enabler-related stakeholders, life cycle and good practices</td>
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<td></td>
<td>Enabling processes for governance and management</td>
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<tr>
<td>COBIT&lt;sup&gt;®&lt;/sup&gt; 5 Implementation</td>
<td>Recognizing pain points and trigger events</td>
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<td>Stakeholder involvement</td>
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<td>Capturing stakeholder needs</td>
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<td>Details on Implementation life cycle phases (1-4)</td>
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<td>COBIT&lt;sup&gt;®&lt;/sup&gt; 5 for Risk</td>
<td>Understanding the associated risk in achieving the goals</td>
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The formulation of a business strategy normally starts with techniques for providing enough and relevant supporting material to an executive team responsible for setting the strategy. A common technique used is a strengths, weaknesses, opportunities and threats (SWOT) analysis, as illustrated in figure 2. The four entities used in this model to evaluate a business activity are categorized in terms of origin (internal or external) and usefulness (helpful or harmful) with respect to the enterprise. The information required to make the SWOT analysis effective can be gained by collaborating with seasoned and long-time staff members, reviewing relevant documents or interviewing key stakeholders. COBIT 5 recognizes that setting stakeholder needs depends heavily on understanding the driving influences unique to each enterprise and that GEIT cannot occur in a vacuum. COBIT<sup>®</sup> 5 Implementation provides detailed guidance via “recognizing pain points and trigger events” as well as an understanding of the important aspects of formulating the business strategy in the “Stakeholder Involvement” section. Additionally, COBIT 5 provides guidelines to capture stakeholder needs and an understanding of the associated risk in achieving these goals. The stakeholder needs can be captured only by involving the stakeholders directly. One popular approach to capture stakeholder needs and formulate the business strategy is to arrange a strategy workshop. The SWOT analysis results should stimulate the capturing of stakeholder needs and also challenge the applicability of stakeholder needs during the workshop.

The COBIT 5 generic enterprise goals can provide a starting point for the strategy workshop. The IT executives should be involved in (and, in some cases, drive) the enterprise strategic goals’ formulation. As participants, the IT executives should emphasize the strategic role of IT rather than the supportive role. The IT executives should also utilize the workshop
opportunity to ensure that business leaders get a clear understanding of the current IT position as well as a clear view of how IT strategies will support the business strategies being discussed. All workshop participants should explore the three value disciplines (customer intimacy, product leadership and operational excellence) as the basis for enterprise strategy formulation and, preferably, decide on one of the value disciplines as the primary source of focus for the strategy. COBIT 5 provides a goal cascade for strategically aligning goals at all levels to stakeholder needs and governance objectives (figure 3). The derived enterprise strategic goals should be linked to stakeholder needs and governance objectives of value creation, namely benefits realization, risk optimization and resource optimization (figure 4). The mapping should clarify the type of relationship—primary relationship (P) or secondary relationship (S)—to help focus importance.

Enterprise strategic goals should also be developed by considering the four balanced scorecard (BSC) dimensions: financial, customer, internal, and learning and growth. Further, a visual strategy map should be produced to show interrelationships among developed enterprise strategic goals (figure 5), which will allow a clear understanding of dependencies.

Formulation of an aligned IT strategy can also capitalize on the SWOT analysis method. A technology trends analysis report can be prepared as a useful input to IT strategy formulation. As with the enterprise strategy workshop, a multiday IT strategy workshop can be arranged for formulating IT strategy. Key considerations for an
effective IT strategy workshop include careful selection of participants, grouping of the participants, objectives to be achieved by the workshop, selection of workshop facilitators and type of interaction among groups. Therefore, careful planning and communication are critical to making the workshop a success. Inputs into the IT strategy workshop should include a finalized enterprise goals (BSC-based) work product, an enterprise strategy map, the selected value discipline for the enterprise, results of the IT SWOT analysis, IT generic goals of COBIT 5 and the technology trends analysis report.

A suggested strategic planning process and its relevant inputs are summarized in the flowchart outlined in Figure 6. The enterprise strategy steps are shown in blue, the IT strategy steps are shown in grey, and the inputs are shown in yellow. The IT strategy workshop should also explore the three value disciplines (customer intimacy, product leadership, operational excellence) as the basis for IT strategy formulation. Once the IT strategic goals are identified, they should be mapped to the enterprise strategic goals. As discussed previously, the mapping should clarify the type of relationships involved: primary or secondary. It is also recommended that a visual IT strategy map be produced to show interrelationships among IT strategic goals (Figure 5).
As illustrated, once the IT strategy goals are developed and mapped, it is critical to define and manage all interdependent enablers that will help to ensure the goals are achieved. COBIT 5 provides seven enterprise enablers (figure 7). According to COBIT 5, enablers are factors that individually and collectively influence whether GEIT will work according to plan. COBIT 5 has published guidelines for each of the enabler goals discussed. Because enablers have a direct impact on the success of the overall goals defined, it is important to develop/finalize the enabler goals at the strategic planning level and to map them directly to the defined IT strategic goals. Once the enabler goals are defined, the remaining enabler details can be defined at a later date, but should also conform to the enabler goals. Enabler details include the other enabler dimensions that extend beyond the enabler goal definition, such as stakeholder needs, life cycle and good practices. Enabler goals should be linked to stakeholder needs. A life cycle plan should be developed to ensure the successful management of the enabler through its effective life. Good practices, which can be facilitated by the strategic planning process, should be identified for each enabler; however, the selection of good practices for the enabler should be left to experts in the area of the enabler (e.g., HR, information technology and application architects, process specialists, policy makers).

COBIT 5 has a professional guide for implementation. The guide provides details of seven phases of the implementation life cycle. The what and where phases (1-4) of program management and change enablement can be considered at the IT strategic planning level (figure 8). COBIT 5 implementation life cycle phases to be considered in strategic planning are indicated in figure 9. The strategic planning note column highlights the relevance of the phase to strategic planning.
Figure 9—COBIT 5 Implementation Life Cycle Phases to Be Considered in Strategic Planning

<table>
<thead>
<tr>
<th>Phase</th>
<th>Program Management (Outer Ring)</th>
<th>Change Enablement (Middle Ring)</th>
<th>Strategic Planning Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the drivers?</td>
<td>Initiate program.</td>
<td>Establish desire to change.</td>
<td>Knowing the drivers, initiating strategic planning cycle and establishing the desire for improvement are critical first steps.</td>
</tr>
<tr>
<td>Where are we now?</td>
<td>Define problems and opportunities.</td>
<td>Form implementation team.</td>
<td>Current-state information and SWOT analysis are important inputs for better strategic planning.</td>
</tr>
<tr>
<td>Where do we want to be?</td>
<td>Define road map.</td>
<td>Communicate outcome.</td>
<td>Strategic planning should result in a high-level road map.</td>
</tr>
<tr>
<td>What needs to be done?</td>
<td>Plan program.</td>
<td>Identify role players.</td>
<td>Identifying the role players and breaking down the big picture into manageable steps are crucial for successful strategy implementation.</td>
</tr>
</tbody>
</table>

The COBIT 5 framework provides enhanced process reference model guidance in the COBIT® 5: Enabling Processes guide for governance and management (Figure 10). In this guide, processes are further organized into groups. For governance of enterprise IT, there is one group of five processes, namely the Evaluate, Direct and Monitor (EDM) domain. For management, there are four groups of processes: Align, Plan and Organize (APO); Build Acquire and Implement (BAI); Deliver, Service and Support (DSS); and Monitor, Evaluate and Assess (MEA). As with the direction discussed previously, some of these groups

Figure 10—COBIT 5 Process Reference Model

Source: ISACA, COBIT 5, USA, 2012
and processes should be considered at the strategic planning level. The recommended processes to be considered at the strategic planning level are those falling into the EDM and APO process areas, specifically Ensure governance framework setting and maintenance (EDM01), Manage the IT management framework (APO01), and Manage strategy (APO02).

In future articles, follow-up discussions of additional phases of strategic planning, such as continuous strategic alignment and implementation of strategy, will be presented from a COBIT 5 perspective.

In summary, COBIT 5 provides guidance in the establishment of enterprise strategic plans as well as IT strategic goal alignment and implementation. The COBIT 5 goals cascade (figure 3) provides a solid foundation for IT strategic goals alignment. As is common with setting and executing any given strategy, strategy implementation is considered more challenging than strategic planning itself. COBIT 5 offers end-to-end guidance for strategic planning, alignment and implementation. The guidance is systematic and well organized and is valuable for large audiences irrespective of industry type.

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Endnotes

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