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The Future of Project Management is …
Not a Straight Line
by David L. Pells

The Future of Project Management is …
Not a Straight Line! [1, 2]

David L. Pells

The Future of Project Management continues to be a major topic of interest and entertainment, and even intrigue, around the PM professional world. It is the topic of papers, presentations and even entire tracks at PM conferences. It seems to be of such high interest that I have now been invited to speak on this topic at the PM Days project management conference during 18-19 November 2008 in Finland. The topic of my speech will be the same as this paper; in fact, I am using this editorial as an opportunity to develop this theme and document some conclusions.

The discussion of the future of project management often seems to involve projections based on recent trends in the PM profession or in the application of PM concepts, or in research, theory development and even implementation in the marketplace. One of the biggest difficulties related to discussing future scenarios for project management, however, is the fact that project management means different things to different people – and organizations. So I think first we should define some terms and try to set the context for this discussion. Then I will explain why I think that the future of PM is all over the map, will involve a variety of application scenarios, and will offer many of us opportunities to create positive change in the world.

Some Project Management Definitions

According to *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Third Edition*, published by the Project Management Institute (PMI®), "project management" is defined as "the application of knowledge, skills, tools and techniques to project activities to meet the project requirements." In the same document, a "project" is defined as "a temporary endeavor undertaken to create a unique product, service or result." A "requirement" is defined as "a condition or capability that must be met or possessed by a system, product, service, result or component to satisfy a contract, standard, specification or other formally imposed documents; requirements include the

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[1] Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally published in *PM World Today* in 2008. It is republished here with the author's permission.

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quantified and documented needs, wants and expectations of the sponsor, customer and other stakeholders." [1]

According to Wikipedia, "Project Management is the business process of creating a unique product, service or result. A project is a finite endeavor having specific start and completion dates undertaken to create a quantifiable deliverable. Projects undergo progressive elaboration by developing in steps and predictable increments that are tied to benchmarks, milestones and completion dates. This finite characteristic of projects stands in sharp contrast to processes, or operations, which are permanent or semi-permanent functional work to repetitively produce the same product or service. In practice, the management of these two systems is often found to be quite different, and as such requires the development of distinct technical skills and the adoption of separate management philosophy". [2]

According to the same discussion, "The primary challenge of project management is to achieve all of the goals of the project charter while adhering to three out of the four classic project constraints some time referred to as the "triple constraints." The four constraints are defined as scope, time, cost and quality. The more ambitious goal of project management is to carry the project through the entire project management life cycle, which consists of five phases called Project Management Knowledge Areas: Project Initiation, Project Planning, Project Executing, Project monitoring and controlling and project closing." [2]

According to the *P2M Project & Program Management Guidebook*, Volume 1, "Project management is to apply to a project the professional capability to deliver, with due diligence, a project product that fulfills a project mission, by organizing a dedicated project team with a limited mission period, effectively combining the most appropriate technical and managerial methods and techniques and devising the most efficient and effective work breakdown and implementation routes." [3]

The P2M Guidebook also goes on to state "Three requirements for project management are as follows: (1) Due Diligence; (2) Efficient Performance; (3) Effective Performance…" [3]

According to PRINCE2, project management methodology is "The planning, monitoring and control of all aspects of the project and the motivation of all those involved in it to achieve the project objectives on time and to the specified cost, quality and performance." [4]

There are many other definitions of projects and project management, in virtually every textbook on the topic. It is also useful to note that the professional world of project management in recent years has embraced program management, project portfolio management, enterprise project management and various other related topics.

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The Future Context + Multiple Perspectives

So is project management a body of knowledge, a methodology, a process, a practice, a set of principles and theories, a management philosophy, a profession, an industry, or what? The above definitions provide a wide range of aspects. Rather than dwell on definitions or first principles, however, I prefer to discuss context as a basis for predicting the future. For example:

For practitioners, those engaged in applying project management on programs and projects, PM tends to be understood as a management approach and a set of methodologies and techniques that can be used with supporting tools and technology to successfully plan, control and complete project work.

For enterprise executives, PM might be viewed as either an organizational approach, management philosophy, process, or set of methods and tools for organizing programs and projects, aligning projects with strategies, achieving project results most effectively, and for efficient use of resources.

For individual professionals, PM can also be viewed as a career and profession. Of course, this is the perspective that all those involved in PM professional organizations adopt, in addition to the above. From this perspective, one advances in one's career from project to project, with ever increasing responsibilities and rewards.

For academic leaders and professors, PM includes theory, bodies of knowledge and various concepts, methods, technologies and tools for planning and managing projects. For PM consultants, services organizations, software companies, and training firms, PM is both a business and industry.

Evolving Environments – Different Types of Projects

The evolving global environment for projects and PM should also be considered, including the cultural, economic, industrial, political and social conditions within which projects are being initiated around the world today. Projects and project management are being embraced and used in more and more organizations and industries, and in more public and social organizations. Governments in particular are embracing modern PM in order to achieve results faster at less cost. These trends are resulting in the rapid rise of PM professional organizations and increased visibility in the marketplace for PM.

Let us for a moment consider the future applications of PM. **Russ Archibald** in his great 2006 paper entitled "*A Global System for Categorizing Projects: The Need for, recommended approach to, practical uses of, and description of a current project to develop the System*", explained that "…different types of projects often exhibit different life cycle models and require different methods of governance.." Russ described a

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suggested set of categories (classification system) for projects, including such industries and areas of application as aerospace/defense, construction, environmental management, facilities projects, government, information technology, manufacturing, media and entertainment, pharmaceutical, services, and others. He also mentions International Development projects as a special category. [5]

As highlighted in my January 2008 *PM World Today* editorial entitled "*Back to the Future of Project Management*" [6] and worth repeating here, Russ pointed out several important points in his paper:

➢ Different project categories require different governance practices;
➢ Each project category and many sub-categories differ in a number of respects (he provides eight examples);
➢ A globally-agreed project categorization system is urgently needed and will have many practical uses (he provided five major examples);
➢ Application of "one size fits all" PM methods causes many project failures;
➢ Development of a global project categorization system is a major, multinational project itself. [5]

Evolving Models for Modern PM

Another seminal paper by Hiroshi Tanaka in Japan was published in 2005, entitled "*The Changing Landscape of Project Management.*" According to Tanaka, "project management models can be drawn from such attributes as project management structure and methods, socio-economic drivers that prompt the build-up of the model in question, typical project management techniques offered by the model, primary application areas, and mechanisms for popularizing the model." In this important paper, Hiroshi presented "seven models over four generations", including

• Classic Model A – based on early development from the 1950s and since then in the space, defense, engineering and construction industries, this model represents planning and management methods for capital investment and national or social infrastructure projects; is highly robust; and heavily focuses on the triple constraints of quality (or technical), time and cost.

• Modern Model B - Beginning in the 1980s, more flexible models were developed for use in a wider range of industries and with more balanced PM processes integrating "hard" PM processes such as quality, resources/cost, time and procurement, with "soft" PM processes such as scope, risk, communications, people/human resources, organization and integration. This was most reflected in PM bodies of knowledge published by PMI in the USA and APM in the UK.

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- o Sub-model B1 – Utilized mainly by manufacturing companies to serve as a planning and management framework for strategic new product development. Main users are aircraft, automobiles, pharmaceuticals

  - o Sub-model B2 – Developed for fast moving global business operations as in the information services, telecommunications and information technology industries, characterized by easy entry and less experience.

  - o Sub-model B3 – Project management as change agent for agencies, corporations and other organizations, used for business transformation, to introduce new services and for other organizational change programs, especially governmental agencies.

- Neo-Classical Model – Integration of classical PM with some elements of Modern PM, applied on large global projects by international contractors and with special conditions and aspects, especially in the oil & gas, petrochemicals, and similar industries. Special PM methods include strategic alliances, owner/contractor integration, joint ventures, structured project financing, front-end loading, enhanced work breakdown structures, global procurement systems, global IT and communications systems, and multi-national workforce, with related issues.

- Strategic Model – Developed over the last decade, this model stresses the integration of project management with business or organizational strategies and plans; linking organizational strategy with projects through portfolio project management (PPM), program management, and enterprise PM. This is now being embraced across all elements of business and industry.

- Versatile Model – A hypothetical model expected to evolve in the future, based on versatile, user-friendly management methods for all organizations.

Tanaka suggested multiple futures, depending on which industry, category of projects, and PM models are used, which may vary from organization to organization. [7]

Evolving Application Areas - New Frontiers for PM

In addition to the industries and application areas mentioned above, the globalization of economies and societies is leading to the emergence of some new industries and application areas for projects and PM. Some of those new sectors include nanotechnology, global warming and climate control, humans in space, future energy, and future cities (urban redevelopment). Some of those have been the subject of other recent editorials in *PM World Today* [8] [9] [10]

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In addition, some older (very old, in some cases) industries are seeing increased investment, numbers of projects, and the need for more PM. Examples include transportation infrastructure (roads, rail, air, seaports), with massive investments now planned in this sector in North America and worldwide. When developing economies are considered, however, I see the need for increased investment, projects and PM in industries related to basic human needs, including agriculture and food production, housing, health & medicines, safety & security, education, communications, and energy and power production and distribution.

In addition, globalization has led to a much greater awareness and focus on such multinational social issues as emergency response and recovery (especially related to natural disasters and weather related emergencies), economic development, recovery and management of natural resources (mining, fisheries, forests, oceans), environmental restoration and planetary administration (including the polar regions and under the oceans), international trade and economic relations, peacekeeping and international security, and other ever-more inter-related aspects of modern life. These areas are all seeing rapid increases in the number of programs and projects, with an obvious need for more, and more professional, project management.

Evolving Trends in PM Concepts & Methods

Project management concepts and methodologies have continued to evolve in response to the changing, maturing and growing application environments for PM. Five good examples have received greatly increased attention in the PM professional world in recent years; Portfolio PM, Critical Chain PM, Agile PM, Complex PM, and Governance of PM.

Portfolio Project Management – According to Wikipedia, "Project Portfolio Management (PPM) is a term used by project managers and project management (PM) organizations to describe methods for analyzing and collectively managing a group of current or proposed projects based on numerous key characteristics. The fundamental objective of the PPM process is to determine the optimal mix and sequencing of proposed projects to best achieve the organization's overall goals - typically expressed in terms of hard economic measures, business strategy goals, or technical strategy goals - while honoring constraints imposed by management or external real-world factors. Typical attributes of projects being analyzed in a PPM process include each project's total expected cost, consumption of scarce resources (human or otherwise) expected timeline and schedule of investment, expected nature, magnitude and timing of benefits to be realized, and relationship or inter-dependencies with other projects in the portfolio." [11]

Critical Chain Project Management – Critical chain is the application of the Theory of Constraints (TOC) to projects. The goal is to increase the rate of throughput (or completion rates) of projects in an organization. Applying the first three of the five focusing steps of TOC, the system constraint for all projects is identified as resources. To exploit

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the constraint, tasks on the critical chain are given priority over all other activities. Finally, projects are planned and managed to ensure that the critical chain tasks are ready to start as soon as the needed resources are available, subordinating all other resources to the critical chain. [2]

Agile Project Management – according to Wikipedia, "Agile methodologies generally promote: A project management process that encourages frequent inspection and adaptation; a leadership philosophy that encourages teamwork, self-organization and accountability; a set of engineering best practices that allow for rapid delivery of high-quality software; and a business approach that aligns development with customer needs and company goals." [12]

Complex Project Management – According to the new International Centre for Complex Project Management in Australia, ".. complex projects…include: (a) projects that are characterized by uncertainty, ambiguity, dynamic interfaces, and with significant political and external influences; (b) projects that usually run over a period which exceeds the cycle time of the technologies involved; and (c) projects that can be defined by effect, but not by solution." [13]

Governance in Project Management (GoPM) – One of the most significant trends affecting the PM world in recent years has been the emergence of PM governance and oversight as a major issue, especially for project-based industries and organizations. The Association for Project Management (APM) in the UK, however, has taken the position that every large and medium sized enterprise should implement GoPM, since every such organization can be expected to invest significant resources in projects, both internally and for external customers. The APM "*Guide to Governance in Project Management*" is an excellent publication. [14]

Other areas of PM that are receiving more attention include PM for Public Private Partnerships, PM for mega-projects, and program management, among others.

Some Trends in PM Tools & Technology

Since the advent of the critical path method (CPM), program evaluation and review technique (PERT) and precedence diagramming method (PDM) in the 1960s, software and systems tools and technologies have been a fundamental and important aspect of modern project management. For decades, advances in PM software applications and tools have gone hand-in-hand with advances in the use of PM methodologies and principles. Such tools as Microsoft Office Project, OpenPlan, PlanView, Primavera and Spyder are well known around the PM world. Originally single user tools, these software packages have been transformed into web-based and enterprise-level systems in recent years.

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A few trends to consider:

➢ **PM Software as a Service (SAAS)** – Over the last five years, the most significant trend has been the migration of PM tools to the internet with web-based project collaboration, communication, planning and management tools. These are now generally offered as software-as-a-service (SAAS) resources, with much lower setup and user costs involved. There are now hundreds of companies offering such tools and services.

➢ **Enterprise PM Solutions** – Over the last several years, all of the major PM software suppliers (Deltek, Microsoft, Plannisware, PlanView, Primavera, etc.) have transformed their primary tools into enterprise-level platforms and systems, for use with multiple projects and multiple users. The growing popularity of Portfolio PM within the technology sector is a partial reason.

➢ **Integration of PM with ERP systems** – As enterprise-wide and portfolio PM have been embraced by more organizations, especially in Europe and North America, efforts have been launched to integrate PM with enterprise resource planning (ERP) systems. Three large technology organizations – HP, Oracle and SAP – have led this move, with each offering integrated ERP/PM systems and services. Large PPM software vendors such as Deltek, Microsoft, PlanView and Primavera have developed interfaces to accounting and other information systems for large organizations.

➢ **Move away from single-user tools for complex CPM** – The above trends have led PM software suppliers to develop products for, and to pursue, enterprises as customers rather than individual project managers and PM professionals. As a result, the availability of single-user solutions for planning and managing complex projects with thousands of activities and interfaces has declined.

Some Trends in the PM Industry

Project management as an industry may be used to describe companies that sell PM products, services and technologies in the open marketplace. Those products and services primarily include PM software and related services, PM consulting services, PM training and educational products and services, and turnkey project and construction management services. Here are a few interesting trends:

• **Overall growth of PM Sector** – When the aerospace, construction, defense, energy, petrochemical and transportation industries are considered, PM may now be a $100B industry worldwide. The PPM software industry is a $10B market. PM services in Iraq over the last five years have probably totaled $5B alone. Hundreds of millions of dollars are being spent on PM services in UAE and other Middle

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Eastern locations; the same is true in China where 100,000+ project managers have been trained in the last few years.

- **Rapid and Continued growth of PM in the IT Sector** – This topic was the subject of my June 2008 *PM World Today* Editorial entitled "*Seven Good Reasons for the Rapid Growth of Project Management in IT and why that Trend will Continue.*" As stated in that paper, "over the last decade, modern professional PM has been embraced by organizations involved in IT more rapidly and more seriously than in any other sectors (of industry)….Seven good reason for the rapid growth of PM in the IT sector are (1) massive investments in IT worldwide; (2) the natural project-orientation of IT; (3) the increasing complexity of IT programs and projects; (4) rapidly changing technologies; (5) IT project failures; (6) the Information Age – the Third Wave has arrived; and (7) IT crosses all industries, organizations and projects." [15]

- **Consolidation in the traditional PM Software Sector** – With the recent acquisition of Primavera by Oracle, the trend of consolidation at the top end of the PM software industry is continuing. We can expect this to continue, as the PM market continues to grow, such that 80% of the enterprise PM software sector will be dominated by a few firms. This will lead to new opportunities for smaller firms to enter and succeed in niche markets.

- **Rapid growth & expansion of the PM SAAS Sector** – the low cost of entry for businesses offering products and services via the internet has led to a proliferation of startup PM software-as-a-service companies in the last three years, especially in North America. Because web-based businesses can be anywhere, several have been launched recently in Russia, Ukraine, Eastern Europe, Asia and Latin America, with Europe and North America still the target markets.

- **Entrée of big IT companies in PM software Sector** – Some of the world's biggest IT service companies now have PM divisions with revenues exceeding US$1 billion/year, including HP (consulting, software and services), IBM (services), Oracle (services, software), and SAP (services and software). Huawei, one of China's largest and most rapidly growing technology companies, has embraced PM internally and is now offering PM services.

- **Growth of PM Training Sector** – Project management training is now big business; a recent email claimed that it is now a $1B/year industry. There are now hundreds of companies in this business, partially driven by the global demand for the PMP® certification offered by the Project Management Institute (PMI®) and by the general increased demand for PM. Online PM training programs have also increased dramatically in recent years.

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- **Expansion of PM Consulting Sector** – Just as the PM training sector has grown, so has the PM consulting industry expanded over the last twenty years. Whereas this industry was dominated by small independent companies just a few years ago, today project management is a basic element of most management consulting companies and especially those serving technology industries. PM is a basic and important aspect of the services offered by such companies as ABB, AT&T, EADS, EDS, GE, HP (which recently acquired EDS), IBM, ITT, Lockheed, Siemens and many others.

- **PM as specified service in construction sector** – Project management is now more frequently a contracted service by property developers and owners of major commercial construction projects. This is especially true in such heavy industries as oil & gas, petrochemicals, transportation and utilities. Large American and European construction services companies such as Bechtel, CH2M Hill, Fluor, Hill International, Jacobs and URS are winning PM contracts on large projects. AMEC, the large UK-based engineering and construction services firm, now bills itself as a project management company. These trends have been readily apparent in the Egypt, Saudi Arabia, UAE and other countries where construction labor is readily available, but European and American contractors are hired to provide top level PM.

Some Trends in the PM Profession

All of the above have resulted in a rapidly growing and very healthy PM profession, as represented by PM professional associations, standards, qualifications, and events worldwide. In addition, as more individuals start careers related to PM and others find themselves still engaged as project managers at the ends of their professional lives, PM is gaining momentum as a profession and actual professional career. While debate continues as to whether the PM career field meets any widely-accepted definition for "profession", it is clear that the professional side of the PM field continues to expand. Here are some examples.

- ❖ **Continued growth of PM professional societies** – The growth of PM professional organizations in recent years has been phenomenal. PMI, by far the world's largest member-based PM organization has seen its membership skyrocket from 30,000 only ten years ago to nearly 300,000 worldwide today. The International PM Association (IPMA), the global federation of national PM societies based on Switzerland, now represents nearly 50 member societies with around 75,000 members. AIPM (Australia), KPMA (Korea), PMA (India), PMAJ (Japan), PMSA (South Africa), SOVNET (Russia), UPMA (Ukraine), and others have seen membership grow. The Association for the Advancement of Cost Engineering International (AACEi) and the International Cost Engineering Council (ICEC) both have significant focus on project management, as do professional organizations in

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the construction industry (i.e. International Construction Project Management Association, Construction Management Association, etc.)

❖ **Maturing and expansion of PM Standards** – PMI now offers a family of well received PM standards, including *A Guide to the Project Management Body of Knowledge®; Construction Extension to the PMBOK® Guide; Government Extension to the PMBOK® Guide; Practice Standard for Earned Value Management; Practice Standard for Project Configuration Management; Practice Standard for Work Breakdown Structures; Practice Standard for Scheduling; Project Manager Competency Development Framework; Organizational Project Management Maturity Model (OPM3®); Standard for Program Management;* and *the Standard for Project Portfolio Management*. [16] IPMA has issued a globally recognized International Competence Baseline (ICB) as a basis for its four-level PM competency-based certification program. [17] AIPM in Australia has developed National Competence Standards for Project Management. [18] APM in the UK supports three standards issued by the British Standards Organization, including Guide to Project Management (BS6079-1-2002); Project Management Vocabulary (BS6079-2-2000); Guide to the Management of Business Related Project Risk (BS6079-3-2000); and Guide to Project Management in the Construction Industry (BS6079-4-2006). [19] The UK's Office of Government Commerce has issued several PM standards, including PRojects IN a Controlled Environment, 2nd edition (PRINCE2); Managing Successful Programmes (MSP); Management of Risk (MoR); and Achieving Excellence in Projects guides. [20] From the Project Management Association of Japan (PMAJ), we find *P2M Project & Program Management Guidebook*, rapidly growing in reputation worldwide. [3]

Several global PM standards initiatives are also underway that should be mentioned. The Global Alliance for Project Performance Standards (GAPPS), with the involvement of professional and industrial organizations, is developing an open-source global PM standard. [21] There is also a new project initiated by the International Standards Organization (ISO) to develop a new global PM standard, ISO 21500, with 29 national standards organizations already participating. [22] [23] These are likely to have a major impact on the PM community and industry in the future.

❖ **Market success & continued demand for PM qualifications** – Many large industrial organizations around the world have embraced PM qualifications and certifications in recent years in an attempt to ensure more highly qualified project managers working on their projects. In particular, PMI's Project Management Professional (PMP®) certification has been a runaway success, now with some 300,000 PMP certifications in the marketplace. Other PMI certifications now offered include the Certified Association in Project Management (CAPM); PMI Scheduling Professional (PMI-SP); PMI Risk Management Professional (PMI-

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RMP); and Program Management Professional (PgMP). [24] IPMA offers a 4-level PM competency-based certification program that is also very popular, especially in countries where IMPA national members are active. [25]

❖ **More and bigger PM events around the world** – One of the most notable trends in recent years has been the increasing number of major PM conferences, congresses and symposia around the world. IPMA, PMI and most national PM societies hold a big annual PM event – conference or symposium. Now many PMI Chapters, APM Branches, consulting and software houses, commercial event organizers, and others are sponsoring big PM events. Not surprisingly, big PM events are also being organized by and for governmental organizations, specific industries and types of projects (for example, mega projects and public private partnership infrastructure PM).

Some Predictions of the Future & Why a straight line is impossible

It should now be clear that modern PM involves too many definitions, too many dimensions and perspectives, of applications, concepts, methodologies, practitioners and stakeholders, to support simple straight-line extrapolations. The definitions of both projects and PM are expanding. Organizations and industries are merging and emerging in new fields and new geographic regions. Much of the world's economic activity is now in the form of programs and projects, especially where investment and new developments occur. PM concepts, methods, models and tools must keep pace with these changes. And as globalization continues, more opportunities will be found for new models, new processes and new perspectives. Now here are a few personal projections.

➢ **The Future of PM Applications in a Global Economy** – The application of program, project and portfolio management will continue to grow in industries where they are currently used but will also expand into new industries and organizations in the future. The growth curve may be a steady upward line, but the areas, industries and sectors of application in will be broad and expanding.

➢ **Future PM Models** – Project management models will be needed for every type of project and program, and for every application area (industry, organization, social sector, etc.). That is, there will need to be models for managing large and small projects, simple and complex, flat or multi-layered, involving large or small degrees of technology, for different industries and in different economic, geographic, political and social environments. This will not be a straight line, with expansion in various directions at different rates.

➢ **The Future of PM Concepts (& Theory)** – Future growth and expansion of PM concepts will resemble an expanding sphere or balloon rather than a single line or direction. That is, concepts and theories related to various aspects of program

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and project management will evolve and expand, including those for scope and quality management; resource and financial estimating, management and control; time, logic and schedule planning and control; organizing and leading project teams in a global environment; communications and reporting; governance and stakeholder coordination; and project environmental scanning, business intelligence and emergency response management. Future concepts, of course, will be dictated by and will follow PM models and areas of application.

➢ **The Future of PM as a Process** – Project management should always be understood as a process, or set of processes, associated with managing methods over the program or project life cycle. In the future, these processes will become more closely aligned with business and organizational systems theory, i.e. input, processes, output (results). Soon we will see the application of Systems-of-Systems theory to projects and project management; this should be quite exciting!

➢ **The Future of PM as Methodology** – At the point of implementation, where day-to-day decisions are made and implemented on projects, PM is methodology. It is what project managers and PM team members plan, say and do that makes things happen. Future methodology will follow models and concepts developed for specific types of projects, areas of application or industries. In any one sector, the future of PM methodology may reflect a direct straight-line projection of current trends; but there will be many lines on the chart reflecting the variety of environments, models & applications.

➢ **The Future of PM Tools & Technology** – The use of PM tools and technologies is directly related to technology trends in industry and society. PM solution providers simply harness existing and new technologies to develop and provide new tools to the PM world. Over the last 20 years, new tools and technologies have been based on developments in computing hardware and software and in communications technologies, including the worldwide web. Some of the factors that will affect these trends in the future include advances in computing power (hardware); spread of multi-media software and web technology; global economic development (rise of markets for projects & PM in more places); spread of telecommunications & satellite-based internet access (ICT growth in Asia and Africa); global energy sources and storage technologies; and continued expansion of economic globalization. Within the PM field, and for specific organizations, the market must include enterprise solutions as well as tools for planning and managing stand-alone projects; but all tools must be easier to use and less costly.

➢ **The Future of the PM Industry** – Every aspect of the PM industry should continue to expand for the foreseeable future. That will include PM service providers, tools and technology suppliers, PM education and training businesses, PM consultants, PM information resources (PMForum), PM research entitles (Gardner, etc.), even

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PM entertainment. The market is expanding rapidly now as more organizations across industries are recognizing that they all have projects and program, and can all benefit from more efficient and effective PM. Again, rather than a single straight line, there can be projections for each segment of the PM industry. For example, there is a future need for headhunters in the PM field, to help career PM professionals find their next projects – a natural business that is now growing as well.

➢ **The Future of PM Standards** – As they have been until now, future PM standards will be dictated either by industry or government. In some countries (Australia, South Africa, UK, Ukraine), government has dictated local PM standards, which then drive the local profession and marketplace. In the USA, government has driven the development and adoption of earned value management standards and, to a lesser extent, the acceptance of PMI's standards and certifications. Where government has deferred to industry (still most of the world), PMI's Guide to the PMBOK ® has been broadly recognized, but many others have been developed. Because of ISO's global reputation, the new ISO 21500 PM standard may well be broadly adopted. In the future, there will still be a set of globally recognized standards in the marketplace, including BS6079, GAPPS, IPMA'S ICB, ISO, OGC's PRINCE2 and MSP, and PMI's PMBOK Guide – maybe a few others for specific industries or types of projects. Not a straight line – more like a scatter diagram!

➢ **The Future of PM Qualifications** – Any projection in this area must follow the same as for PM standards above. The future will include a set of qualifications in the marketplace, including those offered by IPMA and PMI. PRINCE2, MSP and ITIL certification will continue to grow in application and influence in the IT sector. When globally recognized international certifications are established and recognized, for example ISO or GAPPS standards, then certification based on those standards may gain recognition. Until then, industry will embrace PM qualifications based on their own needs or the reputation of the qualifications in the marketplace. In that regard, PMI holds a great advantage – we should expect PMI's qualifications to continue growing in popularity in many industries because they are well known and easy to obtain. This projection is not a straight line.

➢ **The Future of the PM Profession** – As you should now anticipate, I believe the future of the PM profession is very robust. From a career perspective, many more individuals will find themselves engaged in PM for a larger portion of their professional lives. As PM becomes more common, it is only logical that more practitioners will consider PM as a profession, whether it meets a generally accepted definition of profession or not. Meanwhile, member-based PM organizations and PM professional societies will continue to grow, in both membership and influence. The responsibility of a professional society is to

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establish standards; educate member professionals; be an advocate for the profession with government, industry and society; and act as steward. Each PM professional organization might have a straight line projection – but the future of the PM profession itself might more closely resemble a cloud.

I hope that I have not confused the matter beyond recognition. In my opinion, the future of PM is robust and exciting. The number of organizations, programs and projects that need professional PM continues to increase. As PM gains wider visibility and recognition in organizations around the world, its adaptation will increase and positive impact grow. This is an exciting prospect. Keep working, asking questions and developing solutions. There is always more we can do.

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[3] Because this paper is 15 years old, some of the links for references may no longer work.

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David L. Pells, PMI Fellow, HonFAPM, ISIPM, PMA, is Managing Editor and publisher of the **PM World Journal** (www.pmworldjournal.com) and Managing Director of the PM World Library (www.pmworldlibrary.net). David is an internationally recognized leader in the field of professional project management with more than 40 years of experience on a variety of programs and projects, including engineering, construction, energy, defense, transit, technology and nuclear security, and project sizes ranging from thousands to billions of dollars. He occasionally acts as project management advisor for U.S. national laboratories and international programs, and currently serves as an independent advisor for a major U.S. national security program.

David Pells has been an active professional leader in the United States since the 1980s, as founder and president of several PMI chapters, founder of PMI's first SIG (Project Earth), and member of the PMI board of directors twice. He was founder and chair of the Global Project Management Forum (1995-2000), an annual meeting of leaders of PM associations from around the world. David was awarded PMI's Person of the Year award in 1998 and Fellow Award, PMI's highest honor, in 1999. He is also an Honorary Fellow of the Association for Project Management (APM) in the UK; the Instituto Italiano di Project Management (ISIMP) in Italy; and Project Management Associates (PMA) in India.

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