VISION: A sustainable and efficient architecture, engineering, construction, owner and operator industry enabled with effective work processes based on collaboration, information technology and open standards.
2015 Strategic Plan

342+ Members  6300+ Adopters
22 Memorandums of Agreements
11 Industry Advisors  7 Sustaining Organizations
12 Alliance Sponsors
8250+ Global Registrants
18+ countries

April 2015

An Authoritative Source of Innovative Solutions for the Built Environment
The National Institute of Building Sciences, authorized by public law 93-383 in 1974, is a nonprofit, nongovernmental organization that brings together representatives of government, the professions, industry, labor and consumer interests to identify and resolve building process and facility performance problems. The Institute serves as an authoritative source of advice for both the private and public sectors with respect to the use of building science and technology.
Foreword

Since it was first chartered in 2006, the National Institute of Building Sciences buildingSMART alliance® has brought together industry professionals to advance work processes, promote information standards (e.g., technical standards, graphic standards, and information exchanges) and improve interoperability. The most recent 2009-2013 Strategic Plan has served us well, providing guidance for these activities.

Looking forward, the Alliance Board of Direction thought it prudent to revisit the existing Strategic Plan to consider today’s business environment, advances in project delivery and the changing needs of our members. This document outlines the aspirations of the Alliance’s objectives. It does not diverge radically from the existing plan; rather it attempts to bring clarity and focus to the purpose, organization and benefits the Alliance brings to members. It purposefully brings focus to activities that will help bring about positive change by engaging professionals through thought leadership, the development of information standards and proven practices, and outreach education.

It is clear that the Alliance must make changes to its business and operational model. We are dependent on funding from sponsors and sales of product we produce. To date, the majority of funding has come from sponsors. The updated Strategic Plan introduces organizational changes to streamline activities, changes in project management to improve consistency, and leadership and diversity objectives to create a healthy, transparent organization.

We hope that after reading the 2015 Strategic Plan that you are as excited about the future of the buildingSMART alliance® as we are. Together we can contribute to positive change in the United States architecture, engineering, construction, owner and operator industry.

Respectfully,

buildingSMART alliance®
Board of Direction
Introduction

Ten years ago, the National Institute of Standards and Technology (NIST) report, “Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry,”1 and the article, “Labor Productivity Declines in the Construction Industry: Causes and Remedies,”2 by Paul Teicholz, PhD, brought attention to challenges in the U.S. construction industry. They motivated debate and action. One would propose that progress has been made in the decade since, but there is still much work to be done.

The buildingSMART alliance® (Alliance or bSa) was chartered in December 2006 as a program of the National Institute of Building Sciences (Institute). This charter is still relevant today and should be pursued with vigor to deliver improvements to the U.S. construction industry.

NIBS [the Institute] recognizes the value and significance of establishing and furthering the buildingSMART alliance® as a cooperative public/private effort to significantly advance the widespread use of interoperability and the coordinated use of innovative information technology (IT) by the nation’s fragmented building industry. Through the leadership and resources of NIBS’ [Institute’s] buildingSMART alliance®, there is strong potential to help greatly improve the U.S. construction industry, through the development and application of the integrated process, and open data standards, to achieve dramatic time and cost savings in the design, construction, maintenance and operation of the constructed environment. A unified buildingSMART alliance® has the potential to secure funding from public and private sources to efficiently and cooperatively support coordinated initiatives aimed at providing industry-wide integration, interoperability and the improved use of IT.3

Today, the Alliance operates as an Institute council. The Institute provides administrative support and financial oversight. The business and projects of the Alliance are managed and executed by volunteers.

The Alliance focuses on bringing together industry professionals to advance work processes, promote information standards and improve interoperability. Projects included the continued development of the United States National CAD Standard® (NCS) and the National BIM Standard-United States® (NBIMS-US™). The NCS provides structure for the exchange of building design and construction data from project conceptualization throughout the life of a facility. The NBIMS-US™ is a consensus-based standard that references existing standards, documents information exchanges and offers best business practices that will eventually span the entire built environment.

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1Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry. August 2004
Gallaher, M. P.; O’Connor, A. C.; Dettbarn, J. L., Jr.; Gilday, L. T.

2Labor Productivity Declines in the Construction Industry: Causes and Remedies. April 2004
Paul Teicholz, Ph.D.

Table of Contents

buildingSMART alliance® ................................................. 1
Vision ................................................................. 1
Mission .............................................................. 1
Goals ................................................................. 1
Industry Leadership .................................................. 1
Membership Value .................................................. 2
Organization Resourcing ............................................ 4

Organization ............................................................. 5
Organization Management .......................................... 7
Relationship Subcommittees ....................................... 8
Development Subcommittees ..................................... 9
Membership Categories ........................................... 11
Memorandums of Agreement ................................... 12
Leadership ............................................................ 13
Organizational Diversity .......................................... 14

Projects ................................................................. 15
Project Initiation ...................................................... 15
Project Execution .................................................... 16
Information Standards Development Process ............... 17
Proven Practice Development Process ....................... 18

For information about the buildingSMART alliance®, visit www.buildingsmartalliance.org
The buildingSMART alliance® (Alliance) leads meaningful change in the architecture, engineering, construction, owner and operator (AECOO) industry, delivering value to its members and allied associations.

Vision

A sustainable and efficient architecture, engineering, construction, owner and operator industry enabled with effective work processes based on collaboration, information technology and open standards.

Mission

To lead the development and deployment of broadly adopted national information standards and practices focused on significantly improving the built environment delivery and operation processes.

Goals

The buildingSMART alliance® will achieve our vision regarding effective information technology adoption within the industry by:

- Providing thought leadership for industry work process improvements
- Enabling and promoting the development of information standards
- Providing a forum to share and develop proven practices
- Developing, promoting and delivering education on information standards and proven practices
- Developing a business model that sustains the programs and activities through the investment and involvement of members and non-members alike, representing both the public and private sectors

Industry Leadership

The buildingSMART alliance® is uniquely qualified to provide industry leadership.

The Alliance provides an open forum for all industry participants (i.e. design professionals, contractors, owners, consultants, material suppliers) to discuss and advance industry issues in a neutral setting that serves to equally accommodate all participants, companies and agencies

- The Alliance, in partnership with other associations, brings together broad industry representation to address issues that cannot be adequately addressed by individual organizations or associations
- The Alliance provides a single venue to develop and access information standards and proven practices, encouraging consistency, easing adoption in commercial use and broadening industry awareness
- The Alliance members are involved in various national and international efforts which further enhances its unique talent pool and knowledgebase
**Membership Value**

Members of the buildingSMART alliance® recognize the following values:

- Improved project delivery informed from participation in cross-industry discussions and knowledge of industry trends
- Reduced operational costs and minimized project risks from adoption of standards that address pertinent business requirements
- Avoided costs from false starts in business process change by participating in open forums to vet ideas and learn from proven practices
- High-performance project teams assembled from access to like-minded professionals

**Owner and Operator:**

- Improved project procurement methods resulting from a better understanding of technology capabilities and proven practices

**Governmental Agency:**

- Fulfilled government mandates from collaborative processes and technology use

**Construction Contractor:**

- Improved effectiveness of transitioning from BIM design through construction to owner handover, via better understanding of technology capabilities and standards
- Increased productivity through improved construction planning, better constructability and enhanced design for modularization and prefabrication capabilities

**Design and Professional Service Firm:**

- Established identity among owners as uniquely qualified for use of BIM
- Ability to develop, analyze and deliver planning and design information through the use of effective work practices and information standards

**Individual:**

- Improved awareness of work practices, information standards and expanded professional network
- Improved project efficiencies and end-user experience enabled through tangible and ready-to-use production enhancing resources, as well as transparently, as embedded in standards-compliant products and processes
**Manufacturer:**

- Improved provision of products through a streamlined process for product data inclusion in projects
- More effective use of the resources available to define reusable manufacturer content based on published quality standards
- Established identity among BIM users as trusted resources for high-quality content

**Industry Association:**

- Expanded reach to more professionals and increased member value through collaboration with other associations
- Access to a standard process for creating information exchange and process standards that can be broadly adopted within any industry sector, and developed and socialized with a broad group of industry stakeholders

**Standards Association:**

- Increased effectiveness and broader applicability through alignment of related standards
- More effective application of information standards to domain-specific industry standard efforts
- Support for integration of proven point-to-point information standards for more comprehensive applicability

**Academia:**

- Opportunity to learn from, and participate in, ongoing Alliance activities and share knowledge and resources with academic thought leaders and future industry professionals enrolled in academic programs
- Access to industry leaders for mentoring, internship and collaboration opportunities

**Software Provider:**

- Streamlined application development processes through a better understanding of industry requirements and broad adoption of information standards
- Recognition through demonstration of product capability
Organization Resourcing

The buildingSMART alliance® must run a viable organization and establish a sustainable funding model to support the activities of its volunteers and Institute staff. As part of the implementation of this Strategic Plan, the Alliance shall manage its activities and projects in a manner that results in viable sources of revenue. The Alliance shall comply with the financial operating requirements of the Institute.

To initiate meaningful industry changes, a wider constituency of the life-cycle facility industry must become actively involved in the funding and activities of the Alliance. To date only a few sponsors have funded the work of the Alliance. Volunteers advance the work of the Alliance with project management and business oversight provided by the Institute. Current successes include the United States National CAD Standard® and the National BIM Standard-United States®. Both volunteer-developed standards have gained market attention and established a credible base of work to build upon.

Now is the time to inject significant resources into the Alliance; to engage subject matter experts representing all life-cycle facility participants (i.e. owners, planner, design firms, construction contractors, material suppliers, lawyers, insurers, government agencies, code officials and software providers); to conduct relevant research to support the continued development and updates of information standards and proven practices; and to provide education programs to enable business and technology transfer within the public and private sectors.

Moving forward, the Alliance will need to solicit and garner funding from several sources, including:

Government Sources: Government agencies will be encouraged to join the Alliance as members, as well as support projects within the Alliance. Additionally, the Alliance will aim to develop a business case for significant funding from the federal government for information standards development within the construction industry.

Private Companies: Private companies will be encouraged to support the Alliance through membership contributions and funding of targeted projects.

Events: An annual conference and focused events will be held to support participants, and raise financial resources through sponsorships and event fees.

Educational Offerings: Both instructor-led and online educational offerings will be developed to support the educational mission of the Alliance and raise financial resources through participant fees. A credentials program will also be explored to provide a strong knowledge foundation for the education program.

Sale of Standards and Web Services: When appropriate, revenue will be obtained through the sale of standards and potential services developed as resources for implementers.

Foundations and RD&D Funding Sources: After defining research, development and deployment (RD&D) projects, foundations and funding agencies will be approached to support targeted projects.
Organization

The buildingSMART alliance® is a Council of the National Institute of Building Sciences. The Alliance, through its subcommittees, works to increase member benefits and advance its mission. Members are encouraged to join a subcommittee as a point of entry to effectively contribute and learn more about the Council’s work and relationships.
Council and Committee Manual

In September 2014 the National Institute of Building Sciences issued its “Council and Committee Manual”.

The manual is intended to provide guidance in the establishment, development, functionality and governance of the Councils and Committees under the Institute. The various councils and committees have been established over the years and often the development has been without overall guidance on operational considerations and a single governance model. This manual is developed to provide the framework for a single governance model to be followed by all Councils and Committees under the Institute.

The Council and Committee Manual can be accessed from the Institute's website.
Organization Management

The buildingSMART alliance® Board of Direction

The Board of Direction provides vision, leadership and operational guidance for the Alliance while ensuring effective management of resources to advance the vision.

Activities

• Advocate the Alliance’s mission to industry and potential funding entities
• Provide input to strategic direction and assist with prioritizing programs and activities
• Develop a sustainable organization that results in programs and projects that meet the business objectives of sponsors and members
• Develop a leadership management program
• Develop project execution criteria
• Provide oversight to subcommittees’ work and projects
• Coordinate business activities and financial oversight with the Institute

Leadership

• Organized as a group of 5 members – Chair, Vice Chair, Secretary and 2 additional members (ideally the Past Chair should be included as a member)
• Officers should be elected from within the council membership through a nominations process, which includes nominations at-large and from a Nominations Committee consisting of at least 3 members of the council
Relationship Subcommittees

These subcommittees extend the reach of the Council by informing the industry of Alliance activities, nurturing the membership community and fostering relationships with complementary organizations.

Communications Subcommittee

Activities

• Communicate Alliance’s mission and value proposition to the industry
• Keep members informed of the status of the Alliance, the projects and programs
• Promote the programs and activities of the Alliance
• Coordinate marketing activities with the Institute

Leadership

• Leadership appointed by the Board of Direction

Membership Subcommittee

Activities

• Leadership appointed by the Board of Direction
• Recruit and retain members
• Nurture and guide member involvement
• Highlight member success and acknowledge professionalism
• Develop an organizational development program
• Oversee the diversity goals and reporting for the membership and leadership

Leadership

• Leadership appointed by the Board of Direction

Industry Liaisons Subcommittee

Activities

• Develop working relationships with other Institute councils
• Develop working relationships with Memorandum of Agreement (MOA) holders

Leadership

• Leadership appointed by the Board of Direction
Development Subcommittees

These subcommittees plan and execute the development of Alliance initiatives for their respective subject areas.

Thought Leadership Subcommittee

Objectives

• Become an industry-recognized source for critical debate of industry issues related to collaboration, technology and information standards
• Provide awareness of innovative changes to the industry members, government policy makers and software providers

Activities

• Develop the overall vision for the integration of information standards, proven practices and educational initiatives developed and adopted by the Alliance
• Publish industry white papers
• Conduct conferences to gather industry leaders to debate relevant industry issues
• Connect with and support the Institute's Consultative Council

Leadership

• Leadership appointed by the Board of Direction

Information Standards Subcommittee

Objectives

• Become an industry-recognized source for the development of information standards and engagement with industry associations activities
• Enable the development of information standards, including the United States National CAD Standard® and National BIM Standard-United States®, by industry professionals and software providers

Activities

• Develop and maintain an organization structure for information standards, and identify and manage information exchange task groups to develop or evaluate potential information standards
• Define and consistently improve processes for the development of information standards

Leadership

• Leadership appointed by the Board of Direction
Proven Practices Subcommittee

Objectives

• Become an industry-recognized forum for sharing proven practices by engaging with all participants of the industry

• Enable the development of project delivery proven practices for the use of information standards, including the United States National CAD Standard® and National BIM Standard-United States®

Activities

• Identify and manage proven-practice task groups focused on developing or evaluating potential proven practices

• Develop practice guidelines and maintain a compiled list of consensus-approved, proven practices for implementing BIM

• Develop metrics that will allow companies to monitor and measure their progress for implementing proven practices

• Define and consistently improve processes for the development of proven practices

Leadership

• Leadership appointed by the Board of Direction

Education Subcommittee

Objectives

• Develop an educational framework for Alliance content

• Become an industry-recognized source for educational content related to thought leadership, information standards and proven practices

• Guide the Alliance’s program contribution to the Institute’s Building Innovation Conference

Activities

• Develop and publish a knowledge framework for the body of knowledge related to BIM, and identify the opportunities for educational offers through the Alliance

• Develop a sustainable education program coordinating with the Institute’s educational program

Leadership

• Leadership appointed by the Board of Direction
Membership Categories

Organizations

- Are composed of sponsor, sustaining, and contributing organizations
- Represent interests of organization within the Alliance
- Advocate the Alliance’s mission within their organization

Individuals

- Are composed of industry sector and public interest individuals
- Contribute domain expertise and work effort to programs and activities
- Advocate the Alliance’s mission as an industry professional

Students

- Are composed of any individual enrolled as a full-time student in an institution of higher learning
- Gain knowledge regarding the Alliance programs and content for future implementation within the industry
- Advocate the Alliance’s mission within their educational institution, to address future leaders within the industry
Memorandums of Agreement

The buildingSMART alliance® has established working relationships with several professional associations to establish a cross-industry “alliance” focused on advancing processes based on collaboration, technology and information standards. The execution of Memorandums of Agreement (MOA) will comply with the policies of the Institute.

Memorandum of Agreement Holders

• Are composed of associations (receiving complimentary memberships) that share common goals or interests
• Coordinate activities to reduce redundant initiatives and competing projects
• Represent interests of association and members within the Alliance
• Advocate the Alliance’s mission to their members

Alliance’s Responsibilities to MOA Holders

• Promote the mission and value proposition of MOA holders to the Alliance membership
• Provide guidance for engagement in projects and activities
• Share information and keep MOA holders informed of projects and activities

MOA Holders’ Responsibilities to the Alliance

• Promote the mission and value proposition of the Alliance to the MOA holder’s membership
• Establish a point of contact to support a working relationship
• Share information and keep the Alliance informed of projects and activities

General Provisions

• Copyright and license agreement
• Trademark protection
• Patent agreements
• Information sharing
• Fundraising agreement
• Marketing agreement
• Labeling agreement
• Termination agreement

For a complete list of MOA holders, visit the Alliance website.
Leadership

The buildingSMART alliance® leadership is defined as the Board of Direction, subcommittee leaders, Institute staff and any other appointed person who acts on behalf of the Alliance. They represent the face of the Alliance to the industry.

Industry perception is important to any enterprise, especially to an organization that relies on volunteer participation to drive its activities, and on sponsor contribution and funding for a significant portion of its operating budget. Sponsors must not only share a belief in the Alliance’s goals, they need to have the confidence that the leadership is capable of delivering on those goals. The Alliance’s reputation and ongoing support is directly influenced by the reputation and quality of its leadership. The Alliance leadership must work to continuously earn the confidence and trust of its sponsors, partner associations, and membership at large.

The Alliance shall establish leadership that creates organizational motivation, successful contributing attitudes and business focus. The Alliance will nurture camaraderie, transparency, and respect among leaders and the stakeholders of the Alliance, which include the members, the MOA holders and the industry at-large.

The Alliance’s leadership identification and development program shall include the following components:

A process that matches an individual’s capabilities and desires with organizational needs

Desirable leadership characteristics should include the following:

- Experience within the industry and knowledge of the Alliance subject matter
- An ability to inspire volunteers
- An ability to delegate, collaborate and manage volunteers
- Confidence and the ability to communicate effectively
- Recognition within the industry as being supportive of the Alliance mission

A process that is understandable and transparent, allowing well-qualified professionals to contribute to the organization

A well-managed selection process should include the following:

- Documented roles and responsibilities
- Industry-wide published announcements of leadership opportunities
- A clear understanding of a candidate's statement of interest and commitment
- Establishment of a selection committee that will represent the broad and best interest of the Alliance and its members
A process that provides for efficient leadership transition and continuity of programs, while sustaining confidence of stakeholders

An effective process for business and relationship transition should include the following:

- Operational knowledge – to sustain business continuity, steps shall be taken to transfer an understanding of the business and financial realities of managing the work of the Alliance and its relationships with the Institute
- Relationships – the Alliance values the MOA and sponsorship relationship it has developed, and, therefore, transition planning will include the introduction of new leaders

A leadership program in which professionals want to participate

An organization and leadership program that attracts professionals should include the following:

- Opportunities for individuals to develop skills through participation in leadership training and development programs
- The opportunity to join a group of well-respected industry professionals and establishing life-long colleagues

Organizational Diversity

The buildingSMART alliance® shall actively engage members and leaders that reflect a diverse and inclusive cross section of industry as defined in the Institute’s enabling legislation.

The Alliance’s definition of diversity balance include the following:

- Gender, race, age
- Industry domain expertise
- Size of company
- Levels of technical and business knowledge

A diversity program shall include the following:

- Criteria to measure and achieve desired diversity
- Actions to encourage diversity participation
- A process to monitor progress towards achieving diversity
Projects

Project Initiation

As part of the execution of its Strategic Plan, the buildingSMART alliance® shall implement a project initiation and approval process to ensure that programs and activities are in alignment with the Alliance's and the Institute's mission, and that they are prudent investments of financial resources and volunteer efforts.

Project Criteria Requirements

- Must solve an identified problem
- Must provide an identifiable product
- Must have a valid business case
- Must support the mission and vision of the Alliance and Institute

Project Documentation Requirements

- Must have a project description
- Must have a business case
- Must have a project plan and delivery schedule
- Must have a funding plan
- Must have an Institute Project Funding Form

Project Prioritization Requirements

- Must address the value of the project – return on investment, benefits to sponsors
- Must address the time to deliver first product
- Must address the funding potential
- Must address the contribution to life-cycle information management coverage
- Must address the criticality to advancing collaboration, technology and information standards success overall
Project Execution

As part of the execution of its Strategic Plan, the buildingSMART alliance® shall implement best practices in project management, such as the principles of the Project Management Institute (PMI), in order to improve its processes for executing work, putting in place the checks and balances to ensure compliance to business policies and to best manage the investment of the sponsors and members. Additionally, the Alliance shall incorporate lean and agile project management principles (as also defined by PMI) to ensure adaptability to rapidly changing environments, timeliness of delivery and iterative project cycles leading to improved relevancy and more regular delivery.

Project Management

The process shall be well-defined for all phases of a project, including:

Initiating > Planning > Executing > Monitoring and Controlling > Closing

PMI’s knowledge areas define a set of processes, each with inputs, tools and techniques, and outputs.

• Project integration management – assemble and combine all parts into a coherent whole
• Project scope management – define the work to be accomplished, clarify the boundaries of what is and is not included
• Project time management – estimate task, determine project schedule and project completion date; monitor and control throughout the project
• Project cost management – estimate resources required and related costs, including all resources, such as people, materials, equipment and facilities
• Project quality management – audit the work against the quality standards and operational definitions; monitor and take action to ensure deliverables and project management results are performing against schedule and budget
• Project human resource management – acquire the team, develop the overall team performance and then manage that performance to optimize the project performance
• Project communications management – keep records of meetings, actions and assessments; keep all project stakeholders, both internal and external to the project, informed
• Project risk management – identify and manage both threats and opportunities; take action to make risk more visible and increase the potential of positive outcomes
• Project procurement management – identify and manage the purchase of products, services or results needed from outside the project team
Agile Project Management

The principles of agile project management will supplement the traditional project management process by including more incremental and iterative delivery, and greater incorporation of feedback. This results in the additional stages to include:

- Identification and delivery of a Minimally Viable Product (MVP)
- Identification of incremental delivery stages
- Regular Feedback – project teams will present progress to the Alliance leadership and subject matter experts on a regular basis
- Identification of smaller teams with more focused scope

Information Standards Development Process

The buildingSMART alliance® currently engages in national standards activity through two complementary processes incorporated under the National BIM Standard-United States® (NBIMS-US™) umbrella. These activities are:

- The development of normative BIM standards by the Alliance, chiefly in the form of “information exchanges”
- The approval of “reference standards” developed by other organizations that are, or can be, used by one or more components of NBIMS-US™ to support information standards

There is a well-documented process for approval of NBIMS-US™ content; that process is refined iteratively based on lessons learned during the balloting of each edition of NBIMS-US™.

The NBIMS-US™ consensus process is designed to be compatible with American National Standards Institute (ANSI) Essential Requirements.

The delineation between buildingSMART International (bSI) standards and the Alliance standards is largely based around intended scope of the activity. Initiatives intended to result in international standards such as Industry Foundation Classes (IFC), buildingSMART Data Dictionary (bSDD), Information Delivery Manuals (IDM), or Model View Definitions (MVD) are pursued at the bSI level. As it is based in U.S. practice and intended to supplement activities within the United States, NBIMS-US™ activity is appropriately an Alliance activity. It is anticipated that as support for and content of NBIMS-US™ grows, some parts of it may be adopted or adapted by bSI to become international standards.
Proven Practice Development Process

A Proven Practice is distinguished from other components of the buildingSMART alliance® standards by its focus on the proven, high quality implementation practices for BIM, which also support the adoption of the information standards contained within the NBIMS-US™ and NCS. Proven practices offer an approved method, vetted through the Alliance consensus process. For example, a technical information exchange standard for information handoff between a design/construct team and an owner will specify the content and format of the information to be exchanged, the information the owner needs to operate and manage the facility. A proven practice will explain the way in which the design/construct team collaborates to develop the information to be included in the handoff. Another proven practice defines the way in which an owner contracts with the design/construct team to develop the information.

As the industry continues to implement information technologies, proven practices become essential to facilitate that transition at a broad scale.

Proven practices currently move through an approval process that is similar to the information standards process. Peer review is central to the approval of a proven practice. Based on community feedback, the Alliance is exploring options to accelerate the approval and publication process for proven practices, to be more responsive to industry's growing need.

Other components of the Alliance’s strategy complement the development and publication of proven practices.

• Proven practices are candidates for fee based education programs
• Thought leadership will be developing innovative approaches to both information standards and proven practices
• Concepts developed by thought leaders will provide seeds for future proven practices