

Foreword

The buildingSMART alliance is focused on facilitating the most effective capture and ongoing management of information for the full scope of facilities and infrastructure from inception to demolition through the creation of open data standards.

The availability of software and new IT applications has created an environment for information transparency, information sharing, and building in a virtual environment before building “for real”. Facilities and infrastructure are typically unique, we do not have the luxury of building them and seeing how they function in real life, and then improving them as is the case with mass-produced manufactured items such as automobiles and airplanes. Once they are built then we have to live with the results for many decades or spend countless hours and resources fixing them. With facilities and infrastructure consuming three fourths of the world’s raw materials and using sixty percent of the energy consumed, we do not have the choice to build anything less than fully optimized facilities.

The lack of information interoperability coupled with disconnected application software leads to the recollection and recreation of project information on an enormous scale. It is estimated that design and construction has as much as 57% of non-value added effort or waste, whereas manufacturing has 26% waste. The Alliance feels that a reasonable goal for the building sector is to eliminate, over time, 31% of the current waste (the delta), through improving the processes by which we deliver, use, and maintain building information by 2020. In 2008, the design and construction spending in the United States alone was approximately \$1.2 trillion and the amount of non-value added effort is approaching \$400 billion annually.

While every sector of the building industry currently has approaches and terminology describing how it is going to independently do things more efficiently and develop and adopt new processes, through this Strategic Plan the buildingSMART alliance desires to coordinate and focus all those efforts for what is believed to be a much larger gain. This Strategic Plan is the first such plan by the Alliance and is intended to outline an action plan for the Alliance through its members as well as a path forward for the building industry at large. In the interests of the integrated world and US economy and environment, our goal is to establish an approach to capture this \$400 billion annual opportunity in the US and help apply it toward a more sustainable standard of living and more productive and environmentally sensitive workplace throughout the world.

Vision

A global environment where all participants can readily and transparently share, apply and maintain information about facilities and infrastructure to enhance quality and economy of design, construction, operation, and maintenance.

Mission

Improve all aspects of the facility and infrastructure lifecycle by promoting collaboration, technology, integrated practices, and open standards.

Strategy

To support the mission and achieve the vision the buildingSMART alliance must foster new interdisciplinary and collaborative business approaches for the building industry with the goal of achieving the highest level of sustainable design and construction productivity, predictable on time and the most cost effective development and maintenance of the value of the building infrastructure. This will be enabled by the transparent and accessible use of BIM technology, analysis, and simulation supporting smarter and more informed decisions, and interdisciplinary communication and coordination based upon open standards. The approach must also be able to be implemented by all practitioners and stakeholders and supported by capturing and effectively redeploying currently wasted resources. Therefore, incremental results must be evident. This transformation will necessitate process re-engineering to change the current sequential non-integrated culture associated with everything from contractual relationships to building design conceptualization through commissioning and then to pass information to manage operations and sustainment. This collaborative, transparent, and interoperable approach based on open standards must be available to all in the facilities industry. By involving practitioners and all stakeholders in pursuing this strategy, we can build buy-in, eliminate non-value added effort in the facilities industry, and invest outcome of the efficiencies gained to improve further the facilities industry and the built environment.

To accomplish this strategy we shall:

- Goal 1. Create a strong industry presence and recognition for the buildingSMART alliance vision and mission and the programs to support and achieve them.
- Goal 2. Connect major participants of the building industry in a stakeholder activity model describing behavior associated with delivering, maintaining, and operating buildings by articulating improved information exchange processes thereby defining the scope of the Alliance.
- Goal 3. Implement and support coordination of candidate open standards and guidance that populate the stakeholder activity model. Ensure that information needs are identified, capable of being easily collected and applied and that such information encourages flow throughout the lifecycle of the building to all stakeholders.
- Goal 4. Develop a consensus infrastructure to advance open industry standards for interoperability and collaboration between practitioners based on the stakeholder activity model that provides a framework for assessing conformance.

These are the goals of this strategic plan. By achieving these goals, we will realize our vision and mission.

Strategic Plan

Goal 1. Create a strong industry presence and recognition for the buildingSMART alliance vision and mission and the programs to support and achieve them.

The initial goal is to establish a position for the Alliance in the North American in concert with the world marketplace. The Alliance shall be recognized as the organization providing a holistic view of the entire life cycle by coordinating the efforts and needs of all building industry stakeholders

a) Create a strong alliance with relevant organizations.

Ensure that the Alliance is the recognized “go to” organization in the building industry for issues related to open standards, interoperability, based on practitioner’s best business practices.

Metric: Continually increase the number of professional and trade organizations we are linked to who are seeking interoperability and information sharing throughout the industry. We should seek to double the number of current entities by 2010.

b) Expand recognition for the work of the alliance’s with all stakeholders.

Implement programs that will simultaneously increase participation, enhance knowledge of the Alliance, and generate revenue. Using the recognition gained offer events such as webinars, workshops, publications that share knowledge and generate sustaining revenue.

Metric: An annual survey of the building industry indicates that an increasingly larger number of members of the industry are aware of and participate in the Alliance. Events held by the Alliance have a high level of support. Generate sustaining revenue from service publications available to the industry at reduced cost to members.

c) Promote and increase membership of all stakeholders by providing significant benefit.

Identify, quantify, and promote the benefits of the Alliance and ensure that all members are able to realize those benefits and gain value from them.

Metric: Increase membership each year by at least 50%, convert individual members into corporate members or sponsors

Goal 2. Connect major participants of the building industry in a stakeholder activity model describing behavior associated with delivering, maintaining, and operating buildings by articulating improved information exchange processes thereby defining the scope of the Alliance

Having an understanding of the entire building industry is critical to being able to provide awareness to the industry of the scope of the effort as well as to be able to assess progress and determine completeness.

- a) **Identify participating stakeholders willing to participate in identifying and documenting all activities that occur throughout the lifecycle of a facility.**

Involve all stakeholders in the industry by involving organizations who represent constituent interests. Articulate all activities such as energy analysis, cost engineering, or green building, and identify who has interests and responsibilities in each activity. Through mutual agreement, designate a single lead organization or consortium of organizations to be identified as responsible for each activity. Ensure that all interested parties associated with an activity are identified and offered to be included.

Metric: The development of a matrix indicating all activities and responsible parties for each activity shall be completed in the first year of the plan and updated annually.

- b) **Build a stakeholder activity model for industry interoperability identifying and documenting all high level business activities and information flows while identifying what information belongs in a building information model.**

The objective is to identify high-level activities, which will provide scope as well as create the roadmap for information flow and a basis for solicitation and coordination of investment in the transformation effort. The stakeholder activity model will be managed by the National BIM Standard Project Committee. It is identified as a separate goal since it provides the framework for all candidate standards and guidelines.

Metric: The creation of the stakeholder activity model can occur in phases based on resources available; however, the high-level model depicting the overall scope of the effort should be undertaken first. That model should be available during the first year of the plan. The ultimate stakeholder activity model will be federated to multiple organizations. Adoption by the industry will be the ultimate metric.

Goal 3. Seek implement and support coordination of candidate open standards and guidance that populate the stakeholder activity model. Ensure that information needs are identified, capable of being easily collected and applied and that such information encourages flow throughout the lifecycle of the building to all stakeholders

Projects as well as research and development are being accomplished throughout the industry without coordination. These efforts and resources are sub-optimized within our traditional fragmented sectors. If information is to flow and trust attained we need a holistic view to approach spanning the entire lifecycle and involving all stakeholders

- a) **Ensure that projects throughout the industry are coordinated so that neither gaps nor duplication occurs.**

The program liaisons appointed by the Alliance will ensure that we reduce duplication. They shall seek organizations to develop specific projects to cover areas not being developed.

Metric: Active and engaged program liaisons with well-coordinated portfolios of candidate open standards and guidelines from organizations representing large sectors of the industry.

- b) Identify candidate standards and guidelines industry wide that are supporting open standards based interoperability and recognize them as Alliance candidate open standards and guidelines in an effort to coordinate them to populate the stakeholder activity model.**

Program liaisons and industry domain sector lead organizations shall identify efforts and organizations that would benefit from coordination, support, and sharing through the Alliance. Program liaisons will coordinate among themselves to ensure efforts cover all facets of a business process.

Provide recognition to any effort that that demonstrates implementation of open standards.

Metric: The projects section of the Alliance web site is active and represents a broad spectrum of candidate open standards and guidelines focused on supporting the industry transformation.

- c) Provide a holistic repository of integrated model views.**

A repository where integrated model views can be placed so practitioners need not recreate the business practice in their own organization. Based on a concept at the international level for Information Technology called the Information Technology Infrastructure Library (ITIL) the repository would be valued by all practitioners and available at minimal cost to help sustain the Alliance.

Metric: Establish repository and encourage its use. Provide education identifying its value to the industry in supporting interoperability.

- d) Seek and Secure Funding for Interoperability and Collaboration Projects throughout the Life Cycle of the Built Environment**

Seek funding for projects. As projects emerge, market them as evidence of the need for resources and understanding of the industry transformation effort.

Metric: Funded projects.

Goal 4. Develop a consensus infrastructure to advance open industry standards for interoperability and collaboration between practitioners based on the stakeholder activity model that provides a framework for assessing conformance

A set of open standards that support interoperability across our industry are the true product of all our efforts. The projects are the feeder system to define and test the desired standards. Having a fully engaged and fully resourced approach, which encompasses all stakeholders and life cycle phases, will ensure robust and usable open standards. Standards are the basis for seamless communication and interoperability.

- a) Provide Consensus Infrastructure for Developing Open Industry Interoperability and Collaboration Standards**

Develop and sustain an active and open consensus processes to support the inclusion of candidate standards and guidelines in the National CAD Standard (NCS) and National BIM Standard (NBIMS).

Metric: Active project committees and consensus groups are producing open standards according to a published processes and timelines with industry wide acceptance.

b) Publish and Promote Open Standards

The Alliance shall encourage all vendors to provide their customers access to open standard approaches. Provide validation, verification, conformance, and assessment tools.

Metric: Vendors actively support open standards by routinely submitting software to buildingSMART for conformance assessment. Architect, Engineer, Contractor and Operator (AECO) users demand that their software be buildingSMART-certified for interoperability and resources for Alliance sustainment are generated. The Alliance ensures that building industry specific process definitions are accurately documented for vendors to implement.

c) Provide a Sustainment Environment for Open Standards

A standard will likely not be implemented nor followed if it is not sustained. Provide mechanisms for feedback and updates of existing standards, but also liaison, communication, marketing efforts to encourage new development and adoption. If a feedback loop is not in place to ensure that continuous improvements can be channeled into a consensus body to continually update and sustain the standard it will quickly perish. A librarian function will need to be in place to ensure the standards are sustained.

Metric: Throughout the life of this strategic plan we should expect annual releases, adding depth and breadth to the open standard.

d) Ensure education is provided which promotes the goals of the Alliance to support the transformation of the facilities industry

Education is the key to long-term sustainability of the transformational activities we are undertaking.

Metric: Bring colleges, universities, professional organizations, and other education providers into the Alliance to jointly develop principles which can be incorporated into curricula to promote the Alliance and open standards throughout the building industry.