|  |
| --- |
|  |
| Organization Name |
|  |
| Business Case for Organization BIM Integration |

Version 1.02

July 2, 2012

# Executive Summary:

[Abstract]

The executive summary of the Business Case provides a concise overview of the proposed BIM implementation and answers the question of why it should be supported. The executive summary allows reader to be quickly become acquainted with the contents of the business plan. It is intended to aid the decision makers within the organization and may be the most important part of a business plan. An executive summary of the Business Case for BIM Integration includes:

* the background of the BIM Planning process,
* the vision and objectives of BIM Implementation with organization,
* the proposed Uses of BIM with the organization,
* a cost/analysis summary of the BIM implementation, and
* outline recommendations.

The Executive Summary is written using short and concise sentences and paragraphs. It is no more than two pages in length. It is written in the same order as the business case and provides conclusions for the reader.

This template is a tool that is provided to assist in the development of an Organizational BIM Assessment Document. The template Document was created from the buildingSMART alliance™ (bSa) Project “BIM Execution Planning for Owners” as developed by The Computer Integrated Construction (CIC) Research Group of The Pennsylvania State University. The bSa project is sponsored by The Charles Pankow Foundation, US DoD Military Health System, Kaiser Permanente, US Department of Veterans Affairs, Penn State Office of Physical Plant (OPP), and The Partnership for Achieving Construction Excellence (PACE). The BIM Execution Planning Guide for Owners can be downloaded at http://bim.psu.edu.

This work is licensed under the Creative Commons Attribution-Share Alike 3.0 United States License. To view a copy of this license, visit http://creativecommons.org/licenses/by-sa/3.0/us/ or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA.



Table of Contents

[Executive Summary: 1](#_Toc323198524)

[1 Introduction and Background: 3](#_Toc323198525)

[2 Problem Definition, Goals & Objectives 3](#_Toc323198526)

[2.1 Problem Definition 3](#_Toc323198527)

[2.2 Organizational Mission and BIM Vision 3](#_Toc323198528)

[2.3 Organizational Goals and BIM Objectives 3](#_Toc323198529)

[2.4 Planning Team Members: 5](#_Toc323198530)

[3 Proposed BIM Uses 6](#_Toc323198531)

[4 Cost – Benefit Analysis 7](#_Toc323198532)

[4.1 Estimated Benefits and Metrics 7](#_Toc323198533)

[4.2 Cost Estimates 7](#_Toc323198534)

[4.3 Risk Assessment 8](#_Toc323198535)

[4.4 Assumptions 9](#_Toc323198536)

[5 Implementation Timeline 10](#_Toc323198537)

[6 Final Recommendations 11](#_Toc323198538)

[7 Appendices 11](#_Toc323198539)

# Introduction and Background:

The introduction gives the background of BIM within the organization. Additionally, it includes a background on the organization itself. It discusses the mission and vision of the organization and its implementation of BIM. If the organization has used BIM in the past, even at a pilot level, it is summarized here.

# Problem Definition, Goals & Objectives

(This section defines the problem that is being overcome through the use of BIM. It also documents the goals of the organization and includes the BIM objectives.)

## Problem Definition

(What is the problem that is being solved through the use of BIM?)

## Organizational Mission and BIM Vision

(Include a summary of the Organizational Mission)

(Include a summary of the BIM Vision)

## Organizational Goals and BIM Objectives

(Include a summary of the Organizational Goals and BIM Objectives)

Table ‑: Organizational Goals

|  |  |  |
| --- | --- | --- |
| Priority | Goal Description | BIM Objective |
| Choose an item. |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## Planning Team Members:

(Document the personnel that help to create the Business Case. )

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Role | Department | E-Mail | Phone |
|  | BIM Champion |  |  |  |
|  |  |  |  |  |
|  | Discipline Lead |  |  |  |
|  |  |  |  |  |

# Proposed BIM Uses

(The proposed uses of BIM are documented in the business case. This section include methods in which BIM will be used to accomplish the objective and goals of the organization)

Table ‑: Services Provided

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | Current Process | BIM USE | Description | Current Maturity | Desired Maturity |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |  |
| --- | --- |
| Maturity Level | Description |
| 1. Non-Existent | At this maturity level, a process has not yet been incorporated into current business processes and does not yet have established goals and objectives. |
| 1. Initial | At this maturity level, a process produces results in which the specific goals are satisfied, however, they are usually ad hoc and chaotic. There no stable environment to support processes with the inability to repeat such and possible abandonment in time of crisis. |
| 1. Managed | At this maturity level, a process is planned and executed in accordance with policy; employs skilled people having adequate resources to produce controlled outputs; involves relevant stakeholders; is monitored, controlled, and reviewed; and is evaluated for adherence to its process description. |
| 1. Defined | At this Maturity level, a process is tailored to the organization’s standard processes according to the organization’s guidelines; has a maintained process description; and contributes process related experiences to the organizational process assets |
| 1. Quantitatively Managed | A this maturity level, a process is managed using statistical and other quantitative techniques to build an understanding of the performance or predicted performance of processes in comparison to the project’s or work group’s quality and process performance objectives, and identifying corrective action that may need to be taken. |
| 1. Optimizing | At this maturity level, a process is continually improved through incremental and innovative process and technological improvements based on a quantitative understanding of its business objectives and performance needs and tied to the overall organizational performance. |

# Cost – Benefit Analysis

The implementation of BIM should be considered an investment into an organization’s future. Just like any investment, a cost benefit analysis should be performed to ensure that it is a sound investment. A cost benefit analysis sets the financial and non-financial cost of implementing BIM along with the anticipated benefits. The cost-benefit analysis shows the anticipated return of implementing BIM.

The analysis answers the following questions:

* What is the benefit / income from BIM
* What are costs of implementing BIM? This includes both initial and long-term costs. It should also include a possible funding source for the investment.
* What are the major risks associated with BIM implementation?
* What are the major assumptions of this analysis?

## Estimated Benefits and Metrics

A benefits analysis specifies the expected financial and non-financial returns from a given project. It compares ‘with’ and ‘without’ situations. The results of this analysis can be used to evaluate alternative options. It can strongly support a bid for management endorsement and resource allocation.

Some potential benefits that should be calculated based on the organization’s planned implementation are:

* Improved project outcomes such as lower cost and shorter duration
* Streamlining of processes / reduced process time
* Improved quality of information
* Improved interoperability of data
* Reduced human error
* Reduced data entry time
* Centralization of information

## Cost Estimates

The budget should include all identifiable costs to the Organization, including staffing, on-costs, software, legal, media, travel, physical resources, etc. The source of the funds should also be considered – is it an existing available fund or are new and additional funds required?

Some items to consider include

Cost for Planning:

BIM Champion(s) (Percentage of time allocated \* salary for allocated timeframe)

Planning Team Costs (Percentage of time allocated \* Number of Personnel \* salary for allocated time frame)

Personnel:

New / reallocated personnel ($/year including taxes and benefits)

Personnel Education and Training cost ($/course necessary)

Misc. Expenses (Travel Budget, etc)

Infrastructure

Software

Software Purchase($ / license)

Software Maintenance Fees ($ / license / year)

Hardware

Workstations ($/ workstation including accessories

Hardware infrastructure ($ / infrastructure item

Infrastructure maintenance costs ($ per year

Process change costs

Inefficiency Expenses (if applicable)

Learning Curve

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | Item | Salary | Time | Factors | Cost |  |
| Planning Cost | BIM Champion | Salary | Percentage of time allocated |  |  |  |
| Planning Team Members | Average Salary | Average Time All |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

## Risk Assessment

Performing a risk assessment is critical when developing a business case for BIM. Like other changes in work process, the integration of BIM within an organization has risks. Table 1‑1 show an example of how the risk assessment summary may look. The steps of creating a BIM risk assessment include:

1. Risk identification
2. Risk evaluation including likelihood and impact
3. Risk mitigation
4. Risk summarization and recommendation
5. Risk assessment review and update

Table ‑: Risk Assessment Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Risk | Risk Likelihood | Risk Impact | Risk Mitigation Measures | Recommendation |
|  | Low | Low |  | Acceptable |
|  | Medium | Med |  | Not Acceptable |
|  | High |  |  |  |
|  |  |  |  |  |

## Assumptions

Currently there is little data on the cost and benefit of implementing BIM within an owner organization, therefore assumptions of the cost and benefit analysis are documented. Each item is listed in this section.

# Implementation Timeline

The implementation timeline is an overview of the transition plan to building information modeling. It should include milestones and major objectives if the organization moves forward with BIM implementations

# Final Recommendations

The final recommendations include the conclusion that can be drawn about the business case for the implementation of BIM within the organization. The recommendations should include the key factors that need to be considered why determining the validity of the business case. It can also include highlights from the other sections of the document to support the business case for BIM

# Appendices

Appendices include information that supports the business case for BIM with the organization. This information is often too detailed for the body of the business case, however is necessary for the analysis. It also helps to show the level of effort that when into creating the business case. The appendices could include items such as: the strategic plan, the organizational execution plan, a project execution plan, procurement documents, detailed financial analysis, definitions of terms, and other documents to support the business case.