

The business transformation and enterprise architecture framework the London interchange banking - the proof of concept

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Abstract

Financial budgeting and credit controls of a business transformation project and its enterprise architecture subproject(s) must be coherent with the enterprise's business and financial strategic planning goals (Trad & Kalpic, 2017a). Finance related development, governance, risk and legal standards alone are not sufficient and cannot be the only barrier. The enterprise must build a financial strategy that predicts its budgeting and crediting processes; and above all it should apply cleansing of any toxic or corrupt financial interaction with financial bodies in order to avoid 2008-like crisis. Many crediting forms and models exist, in this chapter the authors analyse the intercontinental exchange based credits or simply the London interbank offered rate (LIBOR) that serves as the first phase for calculating interest rates on known and various loans and financial products throughout the world in global financial markets. The defined financial strategy must verify the credibility of credit suppliers and has to verify the possibility of conflict of interest within the crediting body. Erroneous budgeting and credit management definitely will damage the business transformation project or an enterprise architecture project and that may disable the traditional business environments to be a part of the global economy and to compete with its peers. An important factor in frequent business transformation projects' changes and iterations are the roles of the national finance control bodies, business transformation manager, finance analysts and enterprise architect(s) who should be supported by the optimal business transformation framework that should include a global budgeting and credit management strategy model.

Introduction

This Global Budgeting and Credit Management (GBCM) strategy model, that is a module in this research's framework, should be capable of supporting the business environment's long-term financial engineering risk management, legal control and integration in a complex block-chain globalized environment that include multiple desynchronized cash-in/cash-out processes. To achieve this global budgeting and credit management based strategy, Critical Success Areas (CSA) and Critical Success Factors (CSF) must be used to evaluate possible pitfalls, risk, audit, assert, govern, automate, trace, monitor and control of the business transformation project's financial budget and open credits; and this article tries to explain the 2008 crisis reasons (???). The Business Transformation Project (BTP) or an enterprise's architecture project critical success factors can be configured to match the complexities in managing asynchronous global budgeting requests and credit management requirements. Transformed business environments' global budgeting and credit management strategy model have to support built-in automated block-chain controls capable of recognizing budget slippages, fraud, black swan effects (Taleb, 2007), bad investments, business transformation project budget slips, loss of (e)transactions, illegal activities and tax evasions.

A business transformation project and its enterprise architecture subproject(s) financial budgeting and credit controls must be coherent with the enterprise's business and financial strategic planning goals; where the main strategic goal is to minimize risk. Financial budgeting and credit control are essential for the business enterprise's sustainable growth in the integration into local, regional and global economies. Budgeting and credit control depend on the enterprise's capacities to acquire flexible credits and to pay-back the borrowed volume of money with its interests in the defined timeline. Budgeting and crediting

schemes can be supported by financial engineering related risk and legal controls that are necessary and are even fundamental for short-term, mid-term and long-term financial strategy to insure business longevity. In the last decade, the world witnessed unprecedented financial crisis that is probably the worst crisis that mankind has experienced. Some will argue that the '29 crisis is one that marked humanity; in fact the scope is today different because the volume of money and the financial interconnections are far greater today. Today it is important to understand what went wrong or whether the current crisis caused an intentional black swan syndrome, all in order to design a robust budget and avoid toxic financial logic; and this research offers a Framework to support such activities (Trad & Kalpić, 2015a; Trad & Kalpić, 2015b). This article is the proof of concept for inspecting and validating the budget control and credit management model (Trad & Kalpić, 2017a).

The Framework

The Business Transformation Manager's (BTM) role is of crucial importance for the budgeting phase of the complex Business Transformation Projects (BTP) and also enterprise architecture projects; where the BTM or enterprise architect's financial decisions can be made in a just-in-time manner by using outputs from various credible financial sources; to define the initial budget and manage the related credits. The defined strategy should assess and governs credit risk and legally asserts or controls the BTP's financial resources that are formalized with a budget. A research framework can support such an undertaking, as shown Figure 1. Unfortunately, an immense set of automated factors can influence such a process, like: 1) the influence of accounting and funds raising in business transformation projects; 2) working with credible credit suppliers with a very strict legal framework; and 3) the holistic financial (e)law control mechanisms for such projects are non-existent and are complex to implement. A global budget and the management of related credits system's approach are optimal for such credit control mechanisms like the integration and use of the GBCM component via the use of artefacts (Daellenbach & McNickle, 2005). In this research the focus is on the GBCM module's system that manages the BTP's budget and credits. The GBCM can be applied to many BTPs and general financial engineering fields and is a part of the Financial management module (Fm); In this article the authors propose a set of GBCM managerial recommendations and a reusable real world module (Trad 2017a; Trad 2017b).



Figure 1. The neural network implementation environment that enables business engineering.

The GBCM component is managed by the Open Group's Architecture Framework (TOGAF) architecture development method's phases, where each financial micro artefact circulates through its phases. The financial micro artefacts contain their private set of Critical Success Factors (Sugumaran & Lavanya, 2014). These CSFs can be applied to (Peterson, 2011): 1) select the important finance factors; 2) detect the BTP's budget high points; 3) estimate the actual financial status of the BTP using the decision support systems interface; and to eventually take a decision on BTP's continuation; 4) control and monitor the needed GBCM mechanisms; 5) train the BTP's team; and 5) support the project management activities. A well designed GBCM component architecture for the optimal decision making system, must define: 1) the BTP's financial objective(s) and constraints; 2) the underlined technology patterns and auxiliary financial frameworks to be used in the BTP's implementation phase; 3) the BTP finance specialist profiles, roles and responsibilities; 4) the processes to be established to achieve the financial and business objective(s); 5) the expected BTP's financial outcomes; 6) the set of possible financial issues' types that can

arise; 7) a loosely coupled concept as a part of the control and monitoring system; and 8) an automated (e)law component (Trad & Kalpić, 2016a; Trad & Kalpić, 2016b).

The decision making system

Residual risks have to be managed by existing governance frameworks where the BTM's acceptance of residual risks is required. And if the residual risks have been accepted by the BTM, then the corresponding solution actions are launched. These actions have to be cautiously monitored to ensure that the concerned business environment would not be exposed to excessive risks that could cause failure. The risk identification process and actions' assessment designs are maintained by the governance processes and are maintained by TOGAF's phase G that is responsible for Implementation Governance that adjusts the business view. Risk monitoring must be implemented in all of the BTP micro artefacts and the implementation of governance mechanisms to be able to identify critical risks that are to be managed (as CSFs) and which might need much iteration to limit the risks (The Open Group, 2011a).

Critical Success Factors' based strategy

The main CSFs that influenced the 2008 crisis projects are (Shahrokhi, 2008):

- The (dis)ability to protect and enhance the business environment's credibility.
- To protect the business environment's end clients.
- The resources used for attracting new end-clients without financial coverage.
- The capacity to implement customized and control compound financial services.
- To insure technology and methodology feasibility that includes: 1) processing capacity; 2) web and communication infrastructure; and 3) holistic security and governance concepts.
- To integrate real-world globalization that would be based on synchronized financial exchanges.
- To implement regulations for financial exchanges and the global regulations of e-commerce.
- To promote entrepreneurship by: 1) supporting creativity; 2) start-ups; and 3) seasonal business environments; which will accelerate the unbundling transformational process.
- To insure the capital that is the financial resource for the BTPs' human resources 'needs.

All the previous listed factors can support a global competitive financial environment and the needed reservoir of highly techno-financial skills to confront competition by: 1) using avant-garde technologies; 2) business and governance concepts; 3) financial models and 4) proactively defining factors that may endanger the business transformation.

The Strategy

A business transformation project and its enterprise architecture subproject(s) financial budgeting and credit controls must be coherent with the enterprise's business and financial strategic planning goals; where the main strategic goal is to minimize risk. Budgeting and crediting schemes can be supported by financial engineering related risk and legal controls that are necessary for its financial strategy to insure business sustainability. The last decade the world witnessed unprecedented financial crisis that is probably the worst crisis that mankind has experienced. Today it is important to understand what went wrong or is the current crisis an intentional black swan syndrome, in order to design a robust budget and avoid toxic financial logic dangers.

Dangers for an applied strategy

Dangers that can affect the applied strategy are (Shahrokhi, 2008):

BTP's complexity can lead to significant financial losses and face a 2008-like situation.

The BTP is a major paradigm shift and there would be a need to adopt a new and different way of working with governance and control frameworks.

The business and finance environments complete policy issues should be verified and transformed and banks should be put under total government (?) control; especially the Swiss ones.

Important business and finance environments are often reluctant to execute radical BTPs; anyway secrecy is essential for financial profit schemes.

Business and financial environments in most cases are resistant and reject major organizational and technological changes; therefore there is a need for imposing a financial engineering background based on (re)foundation and reduction of banking secrecy.

The Financial Background

When building the financial structure of the future transformed business environment, the BTP team and enterprise architects must be cautious of the financial locked-in situation(s). Even though some countries like Switzerland offer an attractive financial and tax package, this country applies a legal and financial locked-in trap, it is an unwritten concept that can at any moment sweep out the business environment of its financial resources. This locked-in Swiss model combines: 1) the power of Swiss law; 2) Too Big to Fail banks; 3) Banking secrecy; 4) Ultraliberal economy; 5) Rejection of local and global standards; and 6) A specific political environment.

The banks and other Swiss financial institutions are under no supervision what so ever. That makes the country to become the financial industry protector that sets up fortifications against any possible intrusion; even if these institutions execute irregular and illegal activities. The authors refer to this phenomenon as an instance of the Black Swan phenomena or simply the Swiss Black Swan that business environments should avoid. It is probably wiser to pay more taxes and social services then to face such phenomena and traps (International Monetary Fund, 2009; Taleb, 2007).

The applied finance background's setup critical success Factors

This section's (CSA: AppliedFinanceBackground) set of filtered CSFs and their weightings are:

Critical Success Factors	KPIs	Weightings
CSF_Finance Background_Global Strategy	Inexistant	From 1 to 10. 10 Selected
CSF_Finance Background_BlockChains	Desynchronized	From 1 to 10. 10 Selected
CSF_Finance Background_TheDamage	Immense	From 1 to 10. 10 Selected
CSF_Finance Background_TheRoleOfBanks	Negative	From 1 to 10. 0 Selected

Table 1. The finance background factors and indicators

The modules chained link to architecture and infrastructure

The GBCM needs a specific analysis of the geopolitical background.

The Geopolitical Background

Unbundled business environments

BTPs play an important role in many business and financial environments where they constitute the basis for a flexible, dynamic, global and sustainable business environment; the challenges that can be encountered:

- Controlling the global financial system, and the diversification of financial tools available to the business environment.
- Insure that the banking environment does not stop the BTP's access to financing.
- Promote awareness of complementary financing means, including equity financing and other.
- Tax barrier reduction.
- Fight corruption.
- Integrate logging of competition concept to avoid monopolistic approaches.

The applied geopolitical background critical success Factors

This section's (CSA: Applied Geopolitical Background) set of filtered CSFs and their weightings are:

Critical Success Factors	KPIs	Weightings
CSF_Geopolitical Background_Unbundling	Chaotic	From 1 to 10. 10 Selected
CSF_Geopolitical Background_GDPInfluence	DirectlyRelated	From 1 to 10. 10 Selected
CSF_Geopolitical Background_JoblessRate	DirectlyRelated	From 1 to 10. 08 Selected
CSF_Geopolitical Background_Subprime	DirectlyRelated	From 1 to 10. 10 Selected

Table 2. The geopolitical background factors and indicators

The modules chained link to governance and legal background

The GBCM module needs a specific governance and legal concept that is based on integrated controls in the form of atomic services. **The Governance and Legal Background**

The GBCM requires a holistic governance and control approach that must be supported by a global financial engineering environment. The business environment has to avoid a locked-in situation when applying governance and legal standards and a unique tool, like the all-in-one tool (SAP, 2015). Such all-in-one tools request frequent commercial product upgrades that adds to complexity of the implementation and maintenance phases. Tool's needed features are delayed or never finished, what can provoke failure to deliver fundamental BTP modules and that problem is even more important on the global scale. These all-in-one tools vary significantly from the defined open standards; and if a change is to be done to the (e) system's reintegration, it is often incurring very high costs and BTP risks that cause financial turmoil (Source making, 2015).

The applied governance and legal setup critical success Factors

This section's (CSA: Applied Governance Background) set of filtered CSFs and their weightings are:

Critical Success Factors	KPIs	Weightings
CSF_Governance Background_LockedIn	Integrate	From 1 to 10. 04 Selected
CSF_Governance Background_Governance Frameworks	Automated	From 1 to 10. 06 Selected
CSF_Governance Background_Legal Frameworks	Setup	From 1 to 10. 03 Selected
CSF_Governance Background_Internationization	Automated	From 1 to 10. 02 Selected

Table 3. The governance and legal background factors and indicators

The modules chained link to architecture and infrastructure

The GBCM module needs a strong technology concept that is based on integrated controls in the form of infrastructure services.

The Technological Background

The essential implication of technology in the actual financial domain is immense and it influences its global interaction, productivity, growth and monetary policy. It is a technology-driven domain and because the hyper evolution depends on technology, the financial institutions can be driven in a complex financial information system (Balling & Lierman & Mullineux, 2003). Information systems and other technologies are combined to support banking and financial activities. Such information systems are known as Fintech, what is one of the fastest-growing domains of global business (Oxford University Press, 2017)

The applied technology critical success Factors

This section's (CSA: Applied Technology Background) set of filtered CSFs and their weightings are:

Critical Success Factors	KPIs	Weightings
CSF_Technology Background_Financial Engineering	Integrate	From 1 to 10. 02 Selected
CSF_Technology Background_Standards	ToBeDone	From 1 to 10. 01 Selected
CSF_Technology Background_Globaly Synchronized	Inexistent	From 1 to 10. 04 Selected
CSF_Technology Background_Security Violations	Inexistent	From 1 to 10. 07 Selected

Table 4. The technology background factors and indicators

The authors have set up a proof of concept to verify the backgrounds for the 2008 crisis, based on the Framework's decision making module. These financial building blocks contain GBCM trace, control and monitoring mechanisms (Trad, 2017a).

Proof of Concept

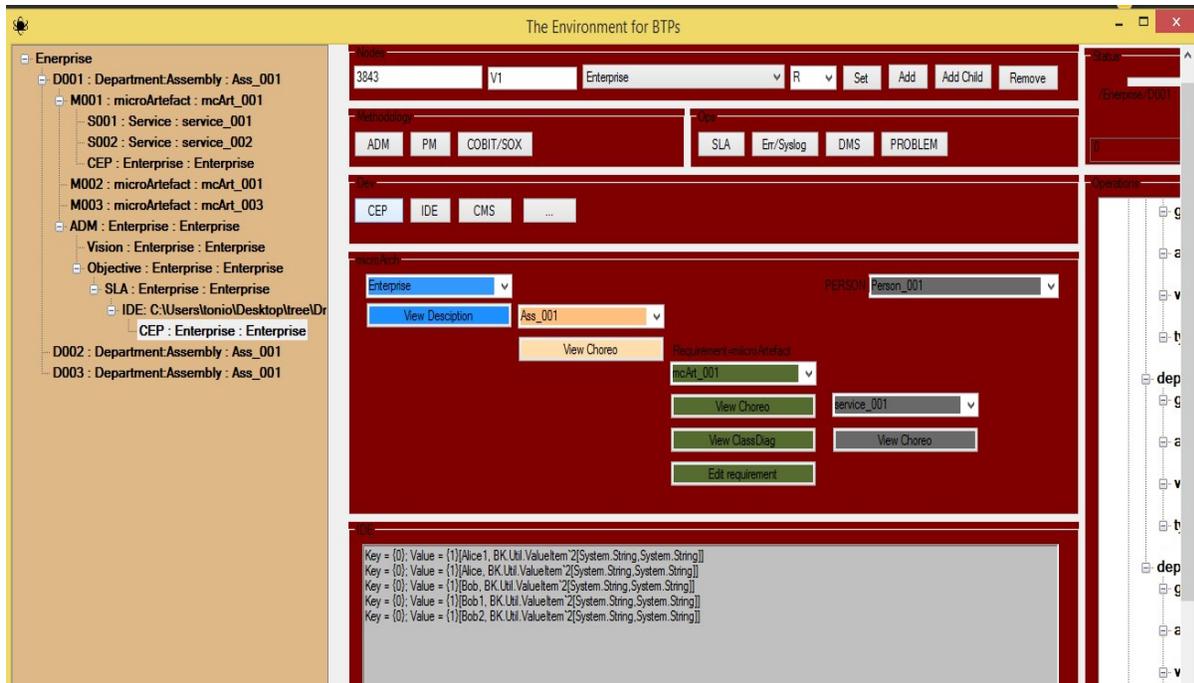


Figure 2. This research's framework

The proof of concept was achieved using the Framework that has been built using the Microsoft Visual Studio .NET development environment and the research framework that is shown in Figure 2. The proof of concept is based on the CSFs' indicators binding to the research question and requirements, where the GBCM was prototyped using Sparx system's Enterprise Architect environment (Sparxsystem, 2015). GBCM uses atomic services that make calls to the GBCM micro artefacts. The reasoning model represents relations between the CSFs, specific finance requirements, micro artefacts or building block and TOGAF's architecture methodology as shown in Figure 3

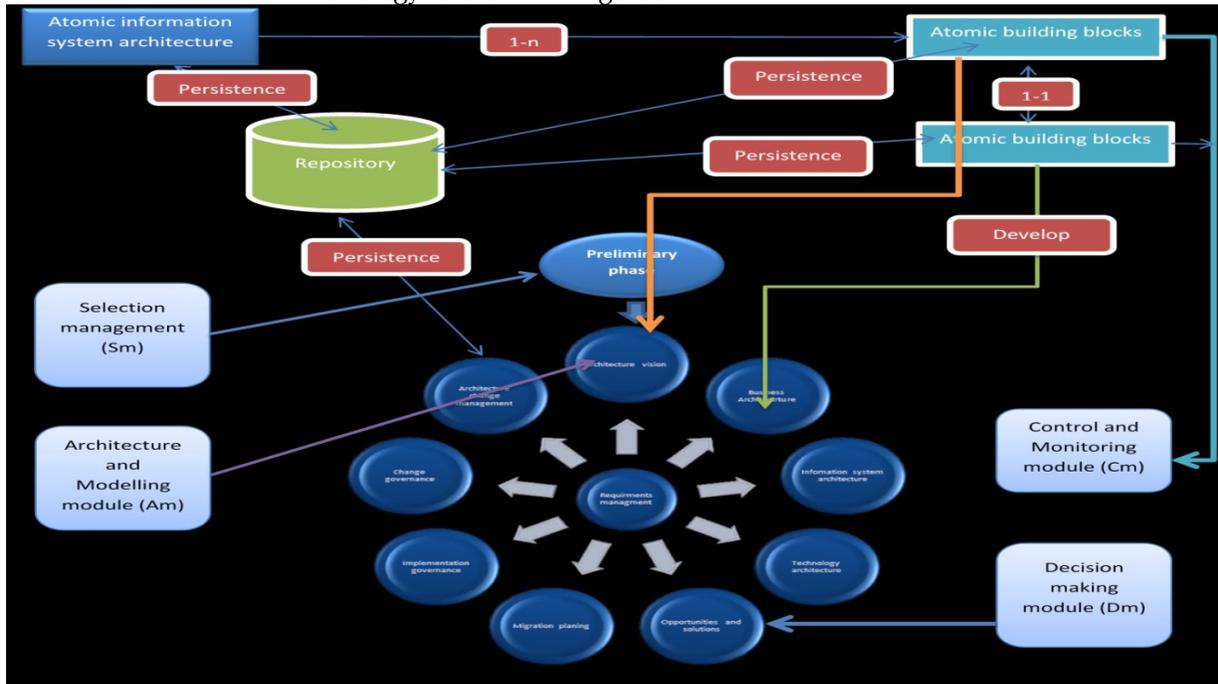


Figure 3. This research's framework

The result of the processing of the decision making system shows clearly that LIBOR is not an independent index and in fact it is directly and strongly bonded to the subprime and all other financial indices.

CSA Category of CSFs/KPIs	Influences LIBOR	Average Result
The Financial Background	Exteremely Influent ▼	From 1 to 10. 10
The Geopolitical Background	Exteremely Influent ▼	From 1 to 10. 9.61
The Governance and Legal Background	No Influence ▼	From 1 to 10. 3.67
The Technological Background	No Influence ▼	From 1 to 10. 3.31

Figure 4. This research's outcomes

The model's main constraint is that the CSAs that have an average result that is less than 7.5 will be ignored. Thus leaves the Financial and Geopolitical Backgrounds CSAs. That helps to path the way of a conclusion on the basis that for specific wealthy and over dimensioned banks that have immense geopolitical strength and are capable of manipulating the LIBOR have used their capacities for enrichment.

Discussions and conclusions

The GBCM component's holistic integration is an important factor for the financial engineering environment's control, evolution and auditing. Many industries have been implementing GBCM like local solutions to respond to probable risk and legal problems and challenges in production. This research phase is part of a series of publications related to the business transformation projects and architectures. This research is based on a mixed action research model; where critical success factors and areas are offered to help BTP architects to decrease the chances of failure. The most important managerial recommendation that was generated by the previous research phases was that the business transformation manager must be an architect of adaptive business system (Trad & Kalpić, 2014). In this research phase and article, the main issue is how to integrate the GBCM's component in a BTP. The resources discovered in literature review and this research's Framework's proof of concept proved the feasibility of this research's phase and defined a related set of recommendations on how to implement a GBCM component. The authors present the Framework's GBCM list of generic managerial, architecture and technical recommendations that are sorted descending (?) by their importance:

This phase's proof of concept: proved the research project's feasibility by implementing the defined CSF pattern.

The BTM must deploy a micro artefact based strategy and an anti-locked-in approach: The GBCM component must be designed by the BTP team and its implementation must be set as the company's strategic financial goals.

The BTP team skills should encompass knowledge of: 1) Financial audit and business processes that needed logging, monitoring and assertion architectures; 2) automated global real-time GBCM environments; 3) enterprise architectures and implementations; and 4) governance and legal integration. In order to design and implement an adequate GBCM component for business transformation project, there is a need to implement an in-house decision making system that can be easily integrated with any framework or tool used.

Use decision and governance logs: To manage BTPs, the team must implement a governance control logs management mechanism for the support tithe financial budgeting and crediting environment.

Apply legal intelligence, decision making module and critical success factors: The decision making module uses the BTP's logging and tracing system's database.

Integrate with other frameworks: Operations, the Information Technology Infrastructure Library and other standard frameworks can be integrated in the BTP through the use of critical success factors.

Implement a global financial subsystem's approach for the control of financial transactions similar to the GBCM component via the use of micro artefacts.

The International Institute for Analytics recommends: 1) to embrace enterprise decision making and artificial intelligence; 2) to clearly define BTM and enterprise architects' executives roles; 3) to build a proof of concepts to decrease costs and to balance between prototyping and final deployment; and 4) to setup an in-house BTP and enterprise architecture framework (Laskowski, 2017).

Implement Critical Success Areas (CSA) that is a category of Critical Success Factors (CSF) strategy where in turn a CSF is a set of Key Performance Indicators (KPI), one KPI corresponds to a single requirement. Application of the ant fragility concept can help in having a holistic and broad guide to non-predictive decision making operations under uncertainty.

A GBCM like component must be implemented in-house to interface it with the Framework's decision making module and logs. Proactively try to avoid financial Black Swan phenomena.

The business environment must choose a currency strategy to be used in its financial (e) transactions.

The authors present the Framework's GBCM list of specific managerial, architecture and technical recommendations that are sorted descending (?) by their importance:

The LIBOR, Subprime and other financial instruments are used and are deterministically managed.

Global Banks, especially the Swiss ones are responsible for the manipulation of the LIBOR index while making immense profit thereof; that resulted in the ruin of millions of households.

The legal system is very mild toward these banking institutions and not really having the will to inspect the causes.

Managers, all types included, should take loans from regional local banks using the national currencies.

The loans interest rate should not be superior to the third of company's net gains.

The Framework's GBCM generic and specific managerial recommendations and a real-world proof of concept, round up the GBCM component's characteristics for the LIBOR manipulation crisis.

Research limitations and direction for further research

The Framework's future research will focus on other LIBOR collateral effects in specific countries and regions.

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