

Capstone Project

Project Technical Discussion / Public Project Summary

Global TMS ACM BCP

ERP Controllers Program Implementation



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Introduction

The intend of this project initiative was to explore how an existing process need to be enhanced further to have flawless execution in case of unexpected business discontinuity scenario.

The report covers an organization structure change with the *phenomenon of shared service center (SSC) concept*. The organization structure change asked for process changes that focusing on automation, standardization, effective cost optimization. They result in lower time need and increased data quality. A standard, highly automated and interface base operational system means reduced human intervention that leads into less knowledge expertise of the daily process. The key challenging point is how the organization reacts to an unexpected event that hazards the smooth execution. How the automatized system is being replaced with knowledgeable human resources?

Company Overview

ExxonMobil Corporation (XOM) is the #1 contributor in the worldwide oil industry that was established by Rockefeller named as Standard Oil Company. As per Forbes Global 2018 XOM is the 13th biggest company in the world that means 37 refineries in 23 countries. The 2017 earnings states 19.7 million USD with 3% of the total worldwide crude production. XOM launched its BSC (Business Support Center) in 2004 in Budapest with other 10 locations (e. g. Bangkok, Curitiba, Buenos Aires, Kuala Lumpur) worldwide together [Appendix 1.)].

The abbreviation of **SSC** (**shared service center**) or **BSC** (**business support center**) defines when a *large and strongly decentralized organization proposes alternative solution to be more effective with their base service line operation*. The supplemental activities like finance, accounting (at XOM is CFS - Corporate Financial Services), HR, IT and customer service are taken out from the core business and set aside into a seperated but centralized independent legal entity. This economies of scale increases the effectiveness in two prospecitives: The cost optimization goes paralel with higher quality standards in increased data integrity.

Project Objective

The BSC phenomenon is also applied for treasury (TR) function at the corporation. There are **3 RTCs (Regional Treasury Center)** from Dallas (US), over Prague and Breda (Europe – Middle East, Africa) till Singapore (Asia Pacific). The treasury department is facilitated by an integrated software application called TMS (Treasury Management System). The application means a bridge between the treasury (stock exchange "language") and the financial reporting (general ledger "language) operation.

The project initiative detected a strong system interdependencies and highlights potential hazards in the process structure: how much TMS is replaceable with proper human resources? What if there is system outage over more days in the mid of the quarter-end-close reporting?

Are there any standard communication protocol and proper accounting skill in place that the worldwide CFS accountants can fix the necessary booking entries into SAP? In base term they are processed automatically by TMS interface?

TMS architecture

TMS is a system that manages the treasury, cash and the investment operation. The regionally provided banking service earlier was facilitated with separate standalone applications. *This non-integrated condition was replaced by EM customized integrated TMS software*. The previous program was out of date and it was without MS Excel and Access compatibility. Furthermore, material number of bookings had to be completed manually.

TMS is composed by 3 modules. The **TRM (Risk Management)** module takes care of the investment, stock exchange base deals and trade transactions (e. g. bond, commercial paper issuance, FX forward, commercial loan etc.). The **CMM (Cash Management)** module has bank interface (network banks of Bank of America, Citibank, RBC) and getting the daily bank statement to generate journal vouchers of finance (non-operational – like interest income/expense) and cash sweep transactions. These 2 modules are the input for the **ACM (Accounting Management)** module that converts transactions into general ledger entries. In this module boking entry coding (mapping rules), regional grouping (batch job creation), mapping happens, and daily automatic booking entry export goes to 8 SAPs and other 13 ledger systems. The TRM, CMM modules operate in all RTC location but ACM module is maintained only in Budapest by Controllers function. [Appendix 2.)]

Business Continuity Plan (BCP)

The **business continuity planning** (**BCP**) is to attain a sustainable level of readiness supported by *reasonable plans for foreseeable risks* that may endanger the continuity of business. BCP is also *managing unforeseen scenarios* effectively through a common framework when it is an emergency preparedness for challenges and best minimize their impacts.

The key purpose of BCP is to manage risks around the health, safety, security of employees (human resources!) and environmental impacts during crisis situations. The expectation is to have the *right combination of planning and response capability that maintains the critical operation* without interruptions of the emergency situations. This emergency response philosophy covers the emergency on four elements that referred with a matured PEAR. **PEAR** means unexpected event on *People*, on the *Environment* and on the corporation itself that is on the *Assets* and on the corporate *Reputation*. [Appendix 3.)]

BCP mode could be triggered by **external or internal circumstances**. Factors could be natural (flood, hurricane, tsunami, earthquake, winter weather conditions), local (pandemic, demonstration, public transportation / utilities, terrorism, political unrest, fire) and technical (system outage / network down). Any of them could lead into four different BCP events: loss

of people, loss of IT, loss of facilities and loss of suppliers. [Appendix 4.)] TMS outage is classified into loss of IT categorization.

TR BCP ensures operation continuity once there is system outage with TRM and/or CMM module in any of RTCs. It identifies the critical positions, infrastructures, requirements, applications and workarounds for the various TMS BCP outcomes of RTC operations like no bank statement available or missing interface of Reuters / Bloomberg for daily interest rate. The software and the BCP document are owned by Treasury function thus the Controllers' process was not covered.

The explored process gap was related to the general ledger interface in the ACM module that is owned by Controller's function. There is also BSC mode if TRM / CMM module operates but no ACM module. It is called loss of IT scenario in site of Budapest. *If there is no automated daily interface connection available, then the bank transactions and cash management related bookings are not processed throughout globally across 800 affiliates.* Even (bank, intercompany) accounting analysts are capable to book the transactions physically but the necessary knowledge to create the entries is missing. Their expertise is concentrated only for their own process operation and no obtained business knowledge about TMS related business activities.

TMS BCP Scenario Test Controllers Program

The initiated BCP project for Controllers function focused on a **robust knowledge maintenance** that was launched as *a pilot only at first time for Budapest* site in 2017 and in the first half of 2018. The *global implementation* has been completed in the second half of 2018 with process improvements of the pilot program' lessons learnt. The scope was EMEA (Europe, Middle East and Africa) region that primarily covered the Controllers' CFS Budapest site located intercompany and bank accounting department (~50 participants) with the minor non-CFS but so-called in-country location (e. g. Upstream division in Cameroon, Angola, Mozambique).

Essential pillar of the initiative was the cross-functional involvement. It means Controllers worked jointly with TR both in the training and in the BCP simulation face. The pilot initiative was also extended for Curitiba located bank accounting department as they are the back-up location in case of loss of people scenario in Budapest. The program is structured into three phases.

Phase 1: Communication Protocol – Active coordination with all impacted parties and agreed on the program details including the proposed time (testing day), expected scenarios, exact site / function contacts. The expected scenario defines which shutdown alternatives is in scope like there is the whole TMS server shutdown or one module (TRM / CMM / ACM outage) does not work. All documentation is stored in SharePoint site in BCP folder. [Appendix 5.)]

Phase 2: Training Program – Extensive comprehensive knowledge enhancement program has been delivered in the below three components.

- a) *TMS Functional Overview Session:* General overview about TR organization structure, about the function core activities, about the system functionality and have a flow chart about the wall to wall business scenario. [Appendix 6.)]
- b) *Bank / Intercompany Transaction Analysis Session:* Training is about transactions are booked by TMS into the ledger but strongly connected for the functional operation of intercompany and bank process. Such a transaction is the daily cash sweep or interest accrual relating to an in-house loan agreement. "In-house loan" means when a finance affiliate provides cash need for an operational affiliate. The financial support could be short term for working capital or long term for project investment.
- c) *Financial Reporting Process Overview Session:* This session is a critical pillar in the program initiative as it means a cross-functional education to enhance the "common language" usage among different functions. The cash managers are confident with their responsibility and their own process "language coding" but they are not familiar with other functions "terminology". Therefore, no effective error resolution is provided if financial reporting asks for correction in their own specific "language coding". There is an exact example about a query when a cash manager does not understand the reporting process related expression like conform, transaction type, P/L account or the process how the daily exchange rate distribution happens into TMS. The purpose of the training is to have a base "cross-functional knowledge" about each other operation that resulting in more effective issue resolution.

Phase 3: TMS Outage Simulation Day – The pre-defined outage scenario is simulated together with the impacted counterparties as a joint effort in a nominated day. One of the below three cases could occur:

- TMS is down, ERP (general ledger e. g. SAP platform) works
- TMS, SAP (general ledger) work but accounting (ACM module) interface failed
- ERP is down

The step by step activity is documented by project improved desk manual is called **"Practical guide for TMS outage recovery plan for ERP"**. Following the harmonized global guideline, the testing day is announced in the morning, and the aligned communication protocol is enacted.

- *First level* in the communication channel is RTC control advisors who notify TMS ACM Supervisor, intercompany and bank global process advisors (GPA) about Budapest BCP activation.
- *Second level* is when GPAs inform the relevant contacts for the regional CFS bank and intercompany departments (Curitiba, Buenos Aires, Houston and Bangkok).
- *Third level* is that CFS organizations involve the non-CFS (in-country) contact and give information about the missing booking entries. The distribution list is updated annual basis.

Regional Treasury Control Advisors collect the missing trading transactions within their own RTC organization in a structured format that is the **Standard Communication Template**. [Appendix 7.)] The template contains all the relevant information that is essential to define the missing booking entries. E. g. the cash flow type is a "must" criteria to determine the expected GL account. The booking coding database is downloaded every month-end from TMS background table. Once the BCP is activated the relevant bookings are processed by ERP controllers. In the simulation day each intercompany and bank analyst had to create three practice postings based on their own business knowledge replacing the automated TMS interface. [Appendix 8.)]

The program is closed with constructive feedback evaluation and lessons learnt analysis. Lessons learnt supports the continuous improvement mindset that resulted in higher effectiveness and data integrity. This happened when initiative considered improvements from project preparation phase that was the mandatory training introduction about the financial reporting and the exchange rate distribution process for TR cash managers (Phase 2, point c)).

Key Controllers BCP event principles

For a well-functioning TMS BCP program there are default background circumstances need to be considered that are also defined in the **Practical guide for TMS outage recovery plan for ERP**:

- The inputs for the manually generated journal voucher is based on the monthly backup download of Mapping Rules table. It can also be called *booking coding database*.
- Journal entries are posted not permanent bookings but as *temporarily accruals only*. After the system recovery the entries are related for the outage time period will be re-processed by the system.
- The manual bookings consider *transaction value threshold* is based on the Global Accrual Guideline.
- The *affiliates are in scope* is updated quarterly. It means that missing entries are booked manually only in those companies where the total value of transactions above 1 million USD.
- Controllers must access to *default independent sources* to be able to create the entries like daily electronic bank reports and month-end bank statement. The CMM module is feed by the bank statement and no need to have information from the traders. Financial deals are recorded in TRM module.
- *Proactive communication* is expected among cross the functions. E. g. bank accountant can support the work for an intercompany accountant when payment transactions are visible on the bank statement and are related between two ExxonMobil subsidiaries.
- For timely issue resolution purpose, the *regular contact list update* is essential. In case of unknown contact name, the communication flow is getting slower and bringing barrier to proceed month-end-close financial reporting activity in timely manner. As alternative information source the Global Organization Chart and Global Chart of Account database are still in feasible.

Outcome and conclusion

The project significantly resulted in corporate and personal added value.

The program successfully tested as pilot for Budapest site in the first quarter of 2018. After the detailed management review, it was implemented globally in third quarter of 2018. The initiative was awarded by higher level of senior HQ management. It is *added to the yearly controller calendar as mandatory control activity* and the simulation program completed annual basis. The program also recognized and adopted as important support to comply with the **global SMC (System Management of Control) policy**.

The initiative gave standard documentation to stabilize the program that are:

- Practical guide for TMS outage recovery plan for ERP
- Standard Training Materials
- Standard Contact List Form
- Standard Communication Template
- Simulation Day Working Sheet

In my *personal development prospective both soft and professional skills experienced robust improvement*. The initiative contributed to have global thinking, process oriented and continuous improvement mindset with enhanced coordination, communication, negotiation skill. My earlier professional experience was always accounting focused job role that was extended further with finance related position.

Last, but not least the MS in Finance studies had proper time match to have great contribution in the program execution.

Appendixes





TMS Architecture

Accounting events are generated for financial transactions and commercial payments, and then processed in the Accounting functionality



Appendix 2.)

Safeguard our	Protect the	Protect Company	Protect our
PEOPLE	ENVIRONMENT	ASSETS	REPUTATION
 Implement Employee Safety and Security Steps Identify potential hazards to any persons Ensure safety for all employees / contractors Determine effect on product properties Potential building/site evacuation 	 Identify sensitivities Ensure no loss of product during elimination / handling of contaminated products Product management / return Waste handling Documentation Ensure rapid response provided Local agency notifications 	 Assess supply impacts Resolve Product Disruptions Arrange for Alternative Product Supply Provide Requested Financial, Logistical & Technical Support 	 Minimize damage to company reputation Perform Incident Investigation Prepare Documentation Implement Communications Plan Follow Media contact guidelines Prompt, honest communication with media, government and regulators

ExonMobil

Appendix 3.)

Resources				
Events	People	Facilities	ІТ	Suppliers
Hurricane	Х	X	Х	X
Pandemic	X			X
Fire		X	Х	
Earthquake	X	X	Х	X
Power Outage		X	Х	

Appendix 4.)

	TMS Contro	oller's Co	οE	Monthly IHB Statements Stewardship Reporting	
	Busir	ness	5 (Continuity Plan	
Documents		All Doc	ume	Find a file	
Controllers Repor	ts	~	3	Name	Modified
Networks				Archive	 November 28, 2018
MEC & Daily Batc Schedules	h			TMS BCP test 2018	 November 28, 2018
Controls		đ	ĥ	Contact list BCP 2018	 November 28, 2018
Business Continu	iity	E		FW Completed Please DocuSign 2018 TMS Business Continuity Plan docx	 October 03, 2018
Plan			1	PRACTICAL GUIDE FOR TMS OUTAGE RECOVERY PLAN 2018	 November 28, 2018
Global Procedures Practices	s and		Ĩ.	TMS ACM Support Backup plan 2018 updated	 November 28, 2018
Training Material				TMS ACM Support Backup plan 2018	 May 14, 2018
Reference Materia	al	q		TMS BCP Scope and Timeline	 December 06, 2018
Projects		a a	ĥ	TMS RECOVERY PLAN RU LIST IN SCOPE	 April 06, 2018
Lists		a a	ĥ	TMS Support BCP Handshake Agreements_final version	 November 10, 2014
Mapping Issues, Business Changes	i,	q	E	TMS transactions of Bank_Intercompany_BCP training	 November 06, 2018

Appendix 5.)

Input: Wall to wall business scenario



Output: example of boking entries coding

- Daily 3 times a day per RTC
 - B3 doc type: RUN-2017-00002222
- Monthly Month-end-close process (WD2)
 - Interest calculation job
 - B3 doc type: CTB-2017-000002222

Appendix 6.)

RU	Base Transaction description	Transaction date	Value Date	Maturity Date	Module	Principal amount	Interest Rate	Curr	Counterparty	CashFlow type*	Instrument Group* (Only for TRM transactions)	Portfolio* (only for TRM transactions)	Bank ID	Bank Account
3413	Repo investment	2017.05.04	2017.05.04	2017.05.05	TRM	18 000 000	1,10	USD	NOSCGB2L-BNS	IR Loan	/IR/LOAN/SHORT	TP-INV-ST-3413-ECBV	CHASGB2L-JPMC	'0040457102
0883	Commercial Paper	2017.05.04	2017.05.08	2017.05.22	TRM	3 600 000 000	0,38	NOK	INGBNL2A-ING	Target Balancing	/IR/DISCOUNT	TP-INV-ST-0883-EMEPNAS	CHASGB2L-JPMC	0041034687
0693	Intercompany transfer	2017.05.04	2017.05.04	2017.05.04	СММ	360 000 000	na	USD	0208-EOIC	CMM-INTERCO	na	na	'CITIUS33-CITI	'40684312
1308	funding	2017.05.04	2017.05.04	2017.05.04	CMM	1 618 910	na	USD	1308-EMQI	FX Traget Balancing	na	na	SCBLQAQX-SCB	'01460733301QAR
AAB-EMPT	pension fund transfer	2017.05.04	2017.05.05	2017.05.05	CMM	11 949 649	na	GBP	0801-EPCO	Target Balancing	na	na	BOFAGB22-BAML	600831947015

Appendix 7.)

Name	User ID	Cluster	ERP sy	Company Code	Test document #1	Test document #2	Test document #3	Challenge 1)	Challenge 2)	Challenge 3
Katalin Kollar-	KKOLLAR/			1994/2505	2200004647/1994	2200004649/1994	2200110221/2505	N/A	NI/A	NI/A
Karadi/Krisztina Vincze	KVINCZE	Germany/BNL	EUB	1004/2000	5200094047/1664	5200094046/1664	5200110251/2505	IN/A	N/A	N/A
Gergely Koleszar	GKOLESZ	BNL	EUB	0530/0572	3200472818/0530	3200472819/0530	3200502460/0572	N/A	N/A	N/A
Rebeka Sarkozi	RSARKOZ	UK	EUB	0801	3200756646	3200756647	3200756648	N/A	N/A	N/A
Eniko Bakos	EBAKOS	BSC/TURKEY/IT	EUB	0260/2294/2933	3200087842/0260	3200129588/2294	3200350968/9 /2933	N/A	N/A	N/A
Vasif Yusifli	VYUSIFL	TURKEY/IT	EUB	0260/2933	3200087842/0260	3200350969/2933	3200350968/2933	N/A	N/A	N/A
Sofio Gigolashvili	SGIGOLA	France	EUP	0513	3201019879/0513	3201019878/513	3201019877/0513	N/A	N/A	N/A
Csilla Diana Csernatonyi	cdcsern	Nordic	EUP	202	3200397934	3200397936	3200397935	N/A	N/A	N/A
Viktoria Korosi	VKOROSI	Italy	EUP	524	3200575570	3200575572	3200575571	N/A	N/A	N/A
								Cash	no automatic	Chana Jana
Dániel Somodi	DSOMODI	Nigeria	G3P	1601, 1857, 4040	1200095199/1601	1200008398/1857	1200507715/4040	allocation/SWE	bank interface is	Civilvi-Interco
								EP posting	available	item missing
Osman Göker Sezer	OGSEZER	UK	EUB	4528	3200303868	3200303869	3200303870	N/A	N/A	N/A
Shin, Do Yun	DYUSHIN	Nigeria	G3P	4040	1200507717	1200507720	1200507721	SWEEPS	SWEEPS	SWEEPS
Micheal C. Ajufoh	MCAJUFO	Nigeria	G3P	4040	1200507722	1200507723	1200507724	N/A	N/A	N/A
Tunde Madarassy	TEMADA	Italy	EUP	524	3200575574	3200575575	3200575576	N/A	N/A	N/A
Peter Retvari	DYUSHIN	Nigeria	EUP	1601, 4040	1200507725 /4040	1200095201/1601	1200095202/1601	SWEEPS	SWEEPS	SWEEPS

	RU	Doc Number	Ту	pe o	of Simulated	Tran	sacti	ions	ERP	syste	em i	in Acce	ptance													
osting 1)	883	1200137699	Sw	/eep	entry doc.	ccy EU	JR		G3B	G3B																
osting 2)	1325		Sw	/eep	o entry doc.	ссу			G3B	G3B																
osting 3)	883		Sw	/eep	entry doc.	ccy NO	GN		G3B	G3B																
G/L Ac	count		*		•																					
Company	y Code	•	*																							
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Appendix 8.)