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Collaborative Environment Framework for E&P Operations

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Summary

Collaboration is where two or more people work together to fulfill their job roles and, critically, where the outcome has a material impact the execution of an organization's strategy.

Thousands of collaborations take place every day: formal review meetings, conference calls, informal catch ups, corridor conversations etc., and some of the collaborations will be more valuable than others.

There are key collaborations that, when done well, could have a disproportionate impact on business performance.

By identifying these 'critical collaborations' and understanding the details of the event (who is involved, why, at what point and how they collaborate) it is possible to focus on those collaborative areas that could deliver maximum benefit.

Introduction

What is a Collaborative Environment Framework?

A Collaborative Environment Framework (CEF) is a flexible environment, designed to connect teams and individuals, to enable real-time collaboration over a shared set of data.

A CEF can include permanent places of work, a 'go-to' area, or even individual desks. All parts, wherever they may be located are connected with the relevant technologies to create a virtual environment.

How a CEF can add value?

Given the different types of collaboration it is important to understand the frequency of critical collaborations and how that can relate to organizational structures.

Organizing by frequency of collaboration (e.g. real time collaboration between operational teams) allows a multi-disciplined support structure that can better service the needs of the business.

Integrating People, Process and Technology

A Collaborative Environment solution means effectively integrating people, processes and technology. These interdependent components can be essential to achieving significant return on investment from a collaborative environment initiative. Implementing them facilitates real- time global asset awareness—or access to data from all of the appropriate assets—by enabling proactive performance management using frequently captured data that can be distributed, converted into relevant knowledge, evaluated and acted upon in real time.

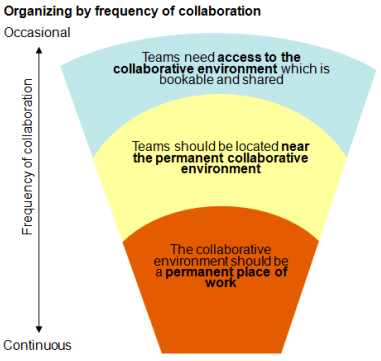

Fig 1: Frequency of Collaboration

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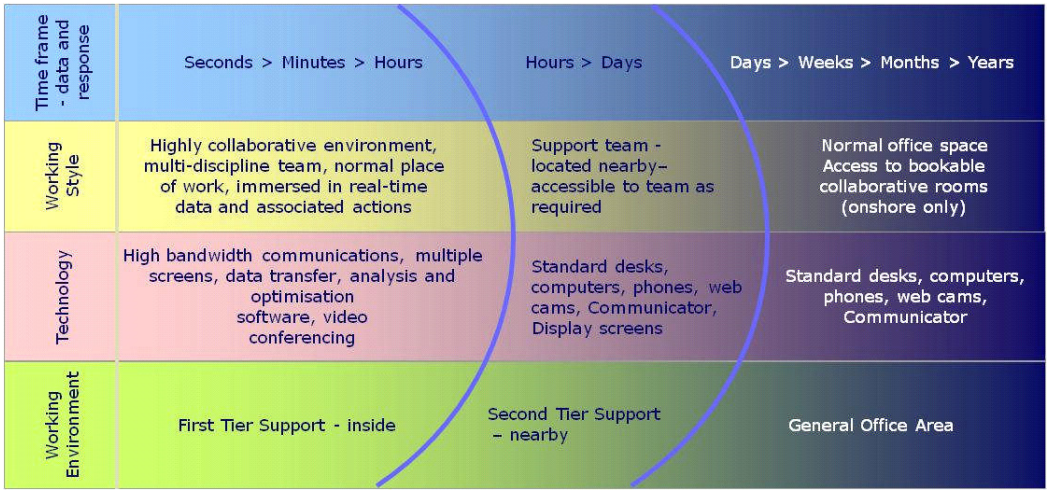

Fig 2: Collaborative Framework

Collaborating Technology and Physical Environment

A CEF can support a range of collaboration between disparate locations, from real time decision making, issue diagnosis to longer term planning.

Changing to a more collaborative way of working requires development of business processes to that are aligned to strategic outcomes. This includes individuals who will be operating the process and what tools they will be using (i.e. technologies and physical environment).

The physical environment can either act as a stimulus or a barrier to collaboration. Getting the physical environment correct is therefore a key to successfully implementing and operating a collaborative Framework.

Why Collaborate?

Some of the reasons to motivate people to collaborate are:

- Cost associated with people working in remote locations
- The Risks associated with the security situation in some parts of the world.
- The ability to support remote operations in real-time is constrained by the number of people on site.
- Executives spending too much time "on the road"

How to get there?

Successful implementation of CEF requires more than just new technology. The key factors that will facilitate successful implementation are:

People: Collaborative environments often require teams and people to behave differently to be successful.
Process: Ways of working need to be adjusted to operate in a collaborative environment.
Technology: is the enabler – it needs to be reliable, easy to use and well supported.
Organization: changes to roles, accountabilities and structures may be required to support new ways of working.
Physical Environment: impacts the way individuals work and it will help in facilitating new ways of working.

Delivering Change Through People

Collaboration is not just about implementing new technologies.

Culture plays a major role in the ability to deliver changes to ways of working. The decisions and actions ('behaviors') of individuals will ultimately determine successful implementation of collaborative ways of working.

Successfully implementing collaborative ways of working requires a structured management of change approach and extensive stakeholder engagement.

Aligning the management of change approach to business strategy, driven by key behaviors which are appropriately rewarded will enable disparately located teams / individuals to have a common language and set of objectives around why collaboration is key to the success of the business.

Innovate Ways of Working

During implementation of CEF scope of critical processes or events to be agreed where the most value can be derived from collaboration. Following are some of the key areas:

- Capture key process performance requirements & operating principles.
- Finalize target processes for re-engineering.
- Define new processes & ways of working.
- Align processes with Strategic Objectives.
- Define physical information flows.
- Define key Process Decisions.
- Provide ongoing support to facilitate operating new processes post implementation.

Integrating Technologies and Physical Environment

Changing to a more collaborative way of working requires development of business processes to that are aligned to strategic outcomes. This includes individuals who will be operating the process and what tools they will be using (i.e. technologies and physical environment).

This typically involves focusing on meeting some or all of the following objectives:

- Processes need to be flexible to operate in an always-on / highly interactive environment.
- Principles around how people should interact in the CEF need to be agreed before the environment is operational.
- Processes should be designed to improve engagement between office based teams and remotely located resources.
- Ensure effective knowledge transfer between teams
- Processes to evolve as the CEF develops.

Technology is an enabler and not the solution

Technology should be viewed as the tools to facilitate collaboration between groups of disparately located people.

The technologies used in a CEF need to be fit for purpose to enable collaboration, i.e. to enable agreed new ways of working and support a flexible environment.

The technology also needs to be fully operational from day one of a CEF going live. Failure to deliver this can severely impact the credibility of the program.

Traditional support models are not always sufficiently reactive to a CEF.

Implementing new technologies in a collaborative environment without the agreed ways of working, behavioral change and supporting organization, can lead to the technology not being used appropriately and quickly becoming redundant.

Designing a Collaborative Environment Framework

Some of the key design factors to be considered are:

- Create an environment that stimulates collaboration whilst achieving a balance for team/ individual work
- Create a flexible space that facilitates changes in the environment when needed
- Creating a working environment that is safe and secure
- An inspiring environment that makes people feel valued

Potential Barriers to Success

One should never underestimate the resistance to change.

There is a common perception that 'always-on' collaboration is all about watching what is going on in other locations.

Working in a collaborative environment, for some individuals, can be a significant and at times uncomfortable change. Not focusing on the change management aspects of collaboration will almost certainly lead to failure.

All of this is changing how upstream oil companies address data collection, interpretation and analysis in the oilfield.

Key Findings

Some of the key findings during implementing CEF are:

- Change management through piloting enables teams to be fully involved with developing and implementing collaborative ways of working.
- Extensive stakeholder engagement ensures that all teams involved are aligned to program objectives.
- The delivery of training / coaching to ensure that individuals develop the required skills and behaviors to work collaboratively.
- Aligning Performance Measurement metrics to support evolving roles will enable a change in behaviors.
- Current business processes may have to be amended in order to adapt to more collaborative ways of working.
- Sufficient consideration needs to be given to how technology is used, combined with both people and process aspects of planning and implementation.
- Consider organizing individuals by process and frequency of collaboration rather than by function.

Case Studies

Client Situation

A large multinational oil company was seeking to use Advanced Collaborative Environments to address issues of Operating Efficiency and Field Planning across their portfolio of North Sea assets. A pilot collaborative environment was created, directly and permanently connecting the office to the offshore installation. The pilot included trialing the technology and physical environment, enabling new collaborative ways of working between onshore and offshore as well as between team members in the same location.

Approach

The Advanced Collaborative Environment (one of several eventually established across the business) was a flexible physical environment that was built in the business' offices as a permanent place of work for the onshore team. The new environment included always-on video conferencing and live data feeds of process and plan information. This helped the onshore and offshore team work together to improve the quality and timeliness of their decision making.

The changes to ways of working and the adoption of new technologies was supported by behavioral and skills coaching to allow the team to maximize the benefit from their environment.

Results

The pilot paid for itself within one week of being fully operational. By trialing collaborative ways of working and physically building a collaborative environment within the office, the piloting process acted as an enabler of change: the participating teams helped shape and design the collaborative environment and were fully engaged throughoutthe process of its development and implementation; the pilot also gave a wider audience the opportunity of experiencing the "look and feel" of what is possible within a collaborative environment.

Value Delivered

A number of potential sources of benefits were identified and formed the business case for ACE implementation.

These were:-

- Improvements to Operating Efficiency
- More efficient deployment of people's time
- Logistical savings

Inevitably, benefits to operating efficiency are both the hardest to analyse and reconcile with complete certainty, but they are also by far the most significant source of value. The approach taken to benefits has been both a top down and bottom-up approach. This has meant incident-by- incident reconciliation and valuation, as well as drawing conclusions from statistical trends (such as overall improvements in OE, reductions in back-logs of critical work, increased run-times etc.).

Each benefit has been reconciled and agreed with the Operations team involved. While it has often been difficult to pinpoint with 100% certainty the benefit that should be attributed to the ACE, sufficient data points have been collected, and assumptions sufficiently conservative to make the "leap of faith" a relatively small one. This has allowed us to build an in-depth a rigorous picture of the benefits being delivered.

About the Author

Neeraj Gupta is a Senior Professional at Energy & Resources practice of Deloitte. He has over fifteen years of international experience with leading oil & gas companies. He holds an integrated Master's degree in Applied Geophysics from Indian Institute of Technology at Roorkee.

Copyright Information

Abbreviations Used

*CEF: Collaborative Environments Framework,
*ACE: Advanced Collaborative Environments
*OE: Operating Efficiency

Acknowledgements

1I C Philips, C Critchley, P Shaw, J Thomas,
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2. S Goodwin, C Critchley, P Shaw, N Da Costa
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