

Getting Business Buy-In (Data as an asset)

Requirement:

To quantify the value of Engineering Data Management (EDM) when this data is not considered an asset, and as such does not have the associated rigour & governance, within an organisation.

Problem Statement:

The engineering data lifecycle extends through numerous phases in the lifecycle of operational assets & facilities:

Commissioning & Handover

Average 5 years.

Insufficient clarity provided to EPC contractors on engineering data standards and requirements.

Operations & Maintenance

>20 years.

Complex environment causing poor engineering information quality and considerable cost and delay.

Rehabilitation

End facility/asset useful life.

Handover back to stakeholders subject to compliance based requirements. Failure to deliver to these requirements has reputational risk association.

How are you able to get an organisation/management to fund Engineering Data Management (EDM) initiatives:

Scare Them:

Vicarious liability

Strict form secondary liability.

Should management be presented with data/information regarding an asset/facility and an incident occurs, they are potentially liable.

Look at the consequences more closely.

Key critical information must move up the food chain along the organisations hierarchy as decisions get more complex.

Archiving & destruction

Look at banking industry examples.

Courts have the ability to execute warrants to take computers off desks should discovery orders be executed.

Actively seek out discoverable information including leveraging digital forensics.

Months & months people looking through your organisations data.

Dazzle them with dollars:

How much extra production could such an initiative derive?

Integrated Operations (IO)

As you centralise and operators move away from the field, they can't reach out and touch assets/facilities as was the tradition.

The engineering data, including 3D models, **HAS IO** represent the physical assets/facilities.

As well as the physical plant, organisations mindsets need to evolve in that they have to purchase the digital plant.

Promote effective Management of Change (MoC) to substantiate the safety case:

Control of engineering documentation or Configuration Management (CM) especially in the Defence industries, is critical to world class manufacturing survival.

Highly regulated Nuclear & Airspace industries comes with the burdens of documentation and reporting, ideally Oil & Gas should seek to prevent this onerous & paper based approach.

Technical integrity & operations safety reliant upon technical authorities. Back-end not always so mature and there is an honour system prevalent.

Sometimes field staff hold-back information & submit information in-batch.

What people think are on the rigs/facilities etc. and what is on the rigs/facilities etc. are sometimes poles apart.

Any changes should be replicated across systems.

Angel project cost to handover negligible.

Has to be driven from operations:

Bonuses need to be paid well into the operations & maintenance lifecycle as opposed to short-term stints with short to medium term strategies.

Private data silos and as such uncontrolled information must be quashed.

Drive major capital projects to deliver project on time and to budget but it is up the organisation to manage the data ongoing. Sustaining digital models are not within operational remit. There is a requirement to put a value on digital assets.

Have to educate senior management. Traditionally there is non-recognition or credibility of data management or engineering data management:

Information is not measurable or tangible.

Management accountability.

Look to other sectors/industries for evidence/research/information data-driven decision making.

Harvard Business Review - October Edition - Big Data

Centre for Advanced Concepts & Technology - Power to the Edge - Command and Control in the Information Age

Have to make it easier for engineers and facility based personnel to find the data and information they require:

Why does/should someone want to do the right thing?

Two different audiences i.e. field & city. Capture everything and provide different views.

Have to capture what the organisation needs.

Difficult to do as maturity not there.

Actively seek out a senior executive sponsor:

Majority operating documents should only have 2 signatures i.e. Don't need 25 signatures.

Single point of accountability.

Leverage risk registers.

Secrets for success

Give people, especially field based personnel, only the data they need and require.

Supportive senior management. In a majority of instances this is initially driven by middle management.

Have a strategy to maintain data, including models.

Progressive handover:

Greenfields project gives you the opportunity to specify what you want.

Have to build data and documentation requirements into contracts.

Deliver data and documents as early as possible.

Takes effort and manpower to deliver outcomes.

Mitigate loss of intelligence from what EPC's delivered.

Operations readiness needs to be involved should operational.

What you measure gets done:

Bar coding/tagging great way of KPI'ing data.

An action should directly be related to a performance outcome.

Managers/engineers/site based personnel should be able to measure and hence know more about their facilities and directly translate that knowledge into improved performance & decisions.

Start small and leverage pilots to show potential i.e. limited regret capital in the eyes on management:

Challenge suppliers to prove their wares and implement pilots within organisations.

Look at new technologies i.e. scan horizons and leverage R&D tax incentives.