Safety First. For a very good reason this is the classic mantra of the offshore industry. Avoiding unwanted incidents to personnel is an obvious reason for carefully sticking to the right procedures. However economic calculations, too, offer good reasons for staying alert to changing market conditions. Lost production is an evil that can quickly result in considerable costs. One of the tools for avoiding spurious plant outages and for increasing operational safety is the use of a Functional Safety Management System (FSMS) – for optimizing safety by focusing all the way from the initial hazard and risk management to final decommissioning.

“There is a balance between operational costs and the cost of safety, but you can’t always see the return from the latter. It is rarely visualized on the bottom line but it is a question of understanding the risk which is an important issue for when sustaining the licence to operate” states John Walkington, Managing Consultant in Functional Safety Management at ABB. In the oil & gas business where the recent market conditions require careful scrutinizing of all expenditure, interested parties should give the functional safety management aspects of the business a continued high priority and focus.

“This balance is a dilemma which everybody has to consider, and it is important to continue investing in both process and functional safety. It always turns out that good safety is good business. The implementation of a rigorous Functional Safety Management System (FSMS) will go a long way to support the needs of the business to successfully continue to operate in a safe way. As part of the operation and maintenance management of the protective layers, such safety functions require regular tests and inspections for ensuring production at a safe level. This is required regardless of any external market impacts on the business,” explains John Walkington. The responsibilities of oil and gas companies do not grow less rigid as a consequence of a lower oil price.

“Recent updates to good practice standards such as IEC 61511-1 Ed 2 where a number of things which used to be “shoulds”, now have turned into “shall” means that Functional safety compliance in today’s environment therefore needs to be more demonstrable. Adoption of such IEC safety life-cycle management is an industry recognised approach for such demonstrating of good practice – even when it is not mandatory”. Consider also that in today’s world, cyber security forms part of the overall safety & security risk assessment process and such requirements require life-cycle management to be applied in a similar way.

Maersk Oil has high focus on Safety and requires new Safety projects to follow the latest IEC 61508/IEC 61511 standards as applied to Tyra Southeast

Functional Safety Management is an investment resulting in profit on the bottom line – even if it is not always that obvious.

It always turns out that good safety is good business, and implementation of a rigorous FSMS will go a long way to support the needs of the business to successfully continue to operate in a safe way.
"There is an interesting link between deployment and use of appropriate Functional Safety Management and the impact on the identification and sustainability of the required risk reduction including the associated cost of implementation. This is further emphasised when entering the operational phase i.e. from earlier life-cycle phase hazard identification and design assumptions to actual operational experience. Application of the safety life-cycle management approach will allow you to be more focused and the entire supply chain will be optimized," concludes John Walkington.

The long term benefits are here

It’s important to focus on areas such as timely planning, detailed hazard reviews, robust requirements specification, correct technology selection and the need to meet long term operation and maintenance of such safety functions. These are an essential part of Functional Safety Management and should for a start not only result in safer production but over time in considerable operational savings.

“If done well, this will reduce project delivery and asset lifetime costs as well as optimize the cost of safety. This is because the robust safety life cycle management process is embedded early in the project execution phase and will transfer the ‘fit for purpose’ solution into the operational life-cycle phase. Within ABB Denmark and throughout our global network of dedicated safety execution centres (SECs), we go to great lengths to fully implement our TUV accredited functional safety management system, because of this ABB have been described as best in class.

“At the end of the day, it is all about the level of attention you give to all your safety related systems. In particular, the Safety Instrumented Systems (SIS) are typically utilised as part of the critical layer of defence to prevent an incident occurring. The relative cost of such safety functions may only add up to perhaps 10-15% of the automation related capital project budget. However, experience suggests both in the project and operational life-cycle phases industry seems reluctant to recognise the benefits of the small additional FSMS implementation plus the additional verification and validation costs that invariably apply”.

“This level of spend is tiny when compared to the costs of a production stoppage, breakdown or incident occurring within a US$ multi-million operational unit. If sufficient resources and competencies are not applied to verify, validate and build in the necessary requirements for successful operation and maintenance, the costs can be substantial” explains John Walkington.

“A typical project execution phase calls for some 12-18 months of SIS resource and cost allocation which will then eventually be expected to be operational for some 15-20 years after it is installed and commissioned. This requires a different mind-set from the various teams involved. In each part of the business and supporting supply chain there is a tendency for working in silos across the various roles, responsibilities and safety life-cycle deliverables. We can do that better in our industry by recognising that project teams have different goals, drivers and budgets to that of operational teams. Invariably this will impact in different ways on the needs of the business and the overall cost of safety. That is something the industry must have on their radar from the very start, even if it may not always be obvious at the beginning. Investing in robust FSMS surely pays over time".