The development of new standards for safety has traditionally been a history of learning from mistakes. Every major accident at sea has lead to new awareness and understanding of risks with new technology and stricter regulations to follow. This happens slowly and at a high price for those involved.

Safeguarding safety and availability is about avoiding undesirable interruptions in what we see as successful, normal operation. We want things to work as intended and over time value is created most effectively in the mode we name “business as usual”.

For this issue of Generations, we focused our writing on three key issues related to safety and availability: systems integration, industry partnerships and customer value. What we discovered was that in all of these areas, there is a shift from the traditional reactive approach to a proactive pursuit of higher performance at lower cost.

Instead of waiting passively for the next accident or undesirable event, developers and trainers create critical situations in a safe test environment. It is the
case with simulator training at Aboa Mare and at the ice lab at Aker Arctic. Not only is experience gained on how to manage rare events, but the boundaries for safe operations of vessels and equipment are explored for more economical use.

At the Remote Diagnostic Service (RDS) facility at ABB, wear and tear can be monitored to schedule timely shipment of spare parts and reduction of stockpile. A change from schedule-based to condition-based maintenance can be achieved and form more effective cooperation between operator, equipment supplier and the class society.

Feedback from operations to product development becomes a continuous process. Best practice can be identified and instead of dealing with problems reactively, service centers will support the management of assets over their entire life cycle.

**Systems integration and simplicity**

IT and automation offer a whole new level of productivity to fleet and port operation. But new technology also adds complexity and increased vulnerability if not intelligently integrated. Furthermore, the challenges of systems integration always include people. Good human-machine interfaces combine pre-processed, real-time data with the unique decision-making capabilities of trained professionals.

Safety and availability by design can be achieved as long as engineers keep searching for the simplest solution to problems. Standardized multi-purpose system components and common technical frameworks like the extended automation System 800xA support this philosophy in power systems, automation as well as in control and advisory systems.

The multi-functionality of an Azipod® unit has lead to the development of “double-acting” ice-breaking vessels and unmatched maneuverability in general.

**Partnerships and risk sharing**

Unbound by geography, the maritime industry demonstrates the dynamics of the global market like no other sector. Industry partnerships are essential for sustainable success in this competitive environment. A bright idea or brilliant new technology can make headlines and win prizes and still have zero impact on the industry unless supported globally.

Together, academic institutions, research and training centers, class societies, design houses and manufacturers bring new solutions to the market. Solo players achieve nothing in this industry. For new technology to be recognized as “proven”, it is essential that it is supported by world-wide service and training. Design houses work as hubs in the networking of professionals who share and integrate the best ideas into working concepts that meet the requirements of financially motivated investors and operators.

**ABB has always strove to be a community player and proudly presents some of its partners in this issue of Generations.**

**Customer value**

Cruise ships, with a priceless “cargo”, constantly push safety and availability to new levels. Working with the main cruise operators in a market scrutinized by American consumers has taught us to never rest on our laurels. In a similar way, day rates above half a million USD for drilling rigs highlight the value of availability.

To never cause delays to a newbuild project or off-hire time in operations for Seadrill, to apply automation to help APM Terminals build its gigantic Maasvlakte II terminal with 25 to 30 percent more productivity than at existing European terminals, and to enable an oil tanker to operate in the Arctic without waiting for the assistance of a specialized ice-breaker are all examples of value creation in which ABB is a major contributor.

Where the safety and well-being of the crew is the top priority, customer value follows. A sound practice in risk management draws the line between unacceptable and acceptable risk and creates a culture of predictable performance, value for money and return on investments.