



# **Human & Intellectual Capital in Marine Transportation**

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# What does ABS do and where is ABS going?

- Safety mission focused & value-driven organization for more than 150 years (*Spirit of ABS*)
- Classification organization
  - Develop technical standards
  - Verify/certify designs, equipment, new construction and vessels in service
  - Independent technical authority
  - Recognized by governments
  - Marine, offshore and government activity
  - 7,000 team members operating in more than 70 countries around the world
- Classification is evolving
  - Safety certification → Performance verification
  - Hardware → People → Software → Cyber systems
- Understanding & assessing technical risk will be significant in the future
  - Technical risk on par with commercial risk



# What are critical KSA gaps?

- Strategic perspective

- Convergence thinking (feasibility, viability & desirability)
- Design thinking
- Risk vs. risk thinking
- International thinking

- Technical perspective

- Systems engineering (e.g., naval architecture)
- Electrical engineering
- Materials engineering
- Information technology (e.g., data analytics)
- More emphasis on advanced degrees

- Generational perspective

- Demonstrate how industries contribute to greater good
- Balance internal company needs with employee expectations
- Need clear strategies to attract, recruit, develop and retain



# What are the key challenges ABS faces?

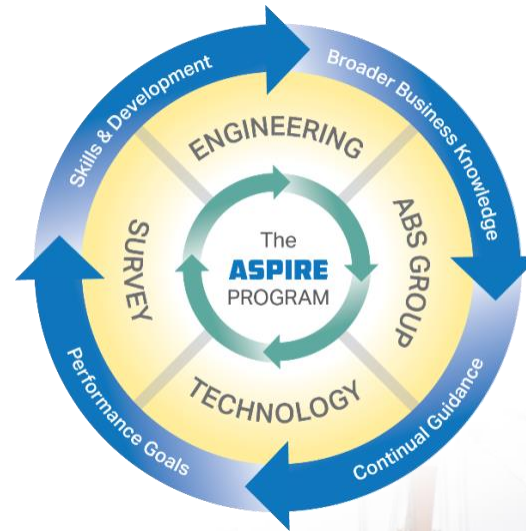
- Must keep up with the rapid changes in technology
- Motivate and retain – it's more than compensation
- Development
  - Planned and formal
  - Include soft skills
  - International exposure (technical and culture)
- Maintain balanced workforce that can embrace change
  - Right age profile balance
  - Right degree balance
  - Right capability balance
  - Right technology/engineering balance
- Being a technical success requires:
  - Technical expertise
  - Operational management
  - Executive leadership





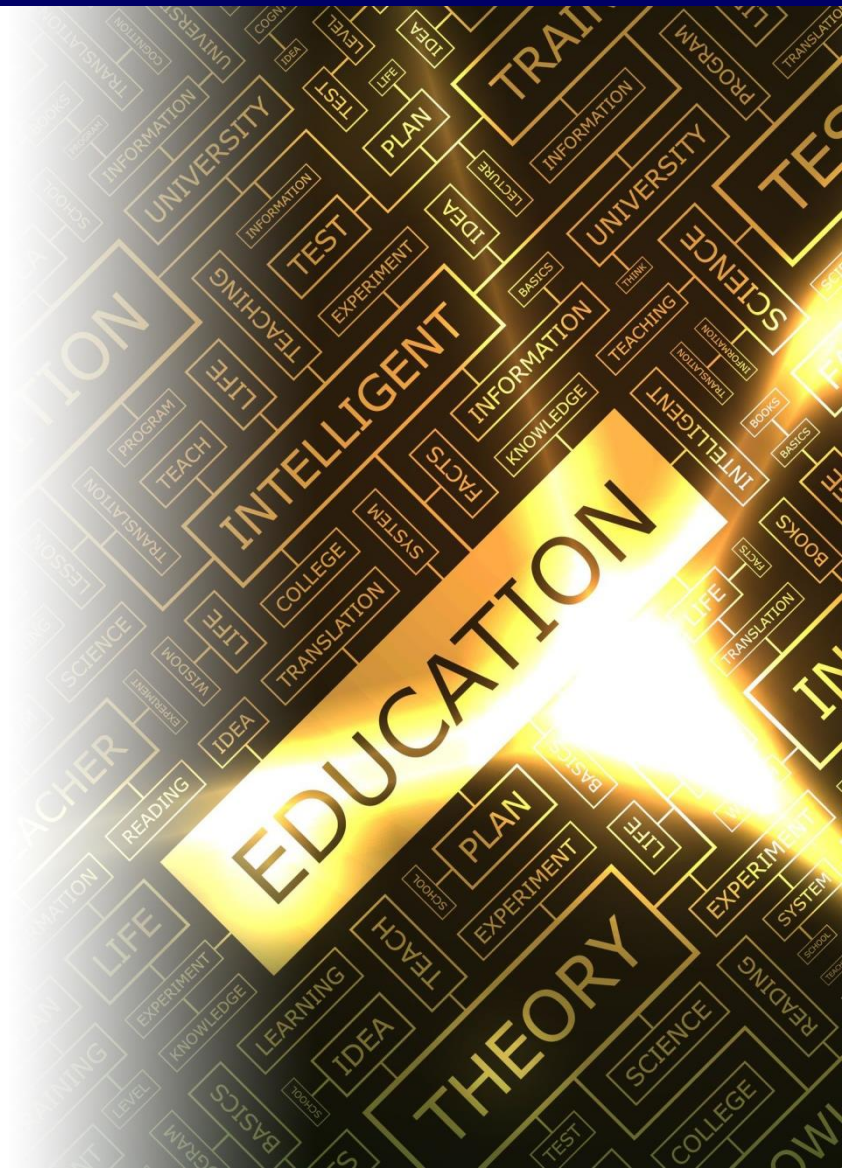
# How has ABS responded?

- Adapted a new learning approach
  - Chief Learning Officer
  - Blended programs
  - Simulation
  - Gaming and interactivity
- Strategic pipeline and flow
  - Education and scholarship program
  - Internships
  - ASPIRE
  - Blueprint for Your Future
- Emphasized importance of technology
  - CTO reports to CEO
- Strong focus on mixing and rotating
  - Engineers / Surveyors
  - Overseas assignments



# What is the role of universities?

- Need to focus on well-rounded engineers
  - Concern that ABET accreditation may be too restrictive
- More emphasis on
  - Leadership
  - Creative thinking
  - Manufacturing and product development
  - Information systems and data analytics (Big Data, sensor technology, predictive technologies)
- U.S. universities should study the Singapore Government/MIT joint venture (SUTD)
  - Curriculum based on 4 pillars
  - Architecture and sustainable design
  - Engineering product development
  - Engineering systems and design
  - Information systems and design



# What are ABS' top priorities going forward?

- Strong academic experience to ground practical decision-making
- Looking for employees who are passionate for engineering, committed to our mission and want to make a difference
- Looking for employees that are flexible and willing to gain international experience
- Continue to hire new graduates despite economic cycles
- Continue to invest in career development
  - Technical
  - Non-technical
- Integrate SUTD 4 pillars into ABS internal learning program
- Recognize that a successful technical organization needs a balanced workforce







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