

“Diversity as a Strategy to Innovation”

INTRODUCTION [Slide 1: Title Slide]

- Thank you, Dave. I truly appreciate the opportunity . . .
 - I'd like to begin with a short video. This video sets the stage for what I will be speaking about today. It talks about Bosch and about the importance of engineers and innovations that happen locally but have global impact and the importance of a truly global environment. **[Slide 2: Video]**
- We live in a global world.
 - 7 continents
 - 196 countries
 - 6,500 languages
 - 7 billion people
 - For engineers, the opportunities are endless and the responsibility is great.
 - Engineers aim to protect world, change it, and make it better. **[Slide 3: historic image of automobile, moon walk, medical device]**
 - Engineers developed the automobile – forever changing transportation
 - Designed space shuttles – redefining our scientific limits
 - Created medical devices – saving and extending lives

BOSCH HERITAGE

- At Bosch, we know the world's greatest innovations are ahead of us
- Bosch is a company with a rich history
 - Began in Stuttgart in 1886. **[Slide 4: Robert Bosch]**
- Robert Bosch understood importance of a global community.
 - Trained internationally in the UK and United States
 - Worked with world-renowned innovators – like Thomas Edison
 - Opened first office outside of Germany 12 years after starting his company.
 - By 1913, he had operations in more than 20 countries
 - with 88 percent of sales revenue outside of Germany
 - Global experiences influenced him as a successful inventor, business owner and philanthropist.

BOSCH TODAY

- Robert Bosch's spirit and vision continue to guide our company on a global scale. **[Slide 5: Bosch Sectors]**
- 68 percent of our business is in Mobility Solutions.
- The remaining business falls within 3 sectors: Industrial Technology, Consumer Goods, and Energy and Building Technology.
- 360,000 associates.
- Main focus: "Invented for life" philosophy
 - International experiences support uncovering new possibilities to make the world better.
 - This philosophy cultivates respect for similarities and differences – and this is what helps drive change and innovation.
- Bosch today is truly a global organization.
 - Centers of competence – focused on solving local problems using solutions and thinking from around the world.
 - We have hundreds of facilities in more than 60 countries.

ARTIFICIAL BOUNDARIES

- **[Slide 6: Road and Shoes]** Much like universities Bosch has processes, divisions and structures – necessary for creating order, measuring progress and providing direction.
- But these can have unintended side effects
 - They can create artificial boundaries.
 - Can lead to silos, bureaucracy, closed thinking, or hesitancy in sharing ideas
 - In general, they slow the innovative process.

LINEAR THINKING

- As an engineer, I recognize that I can be a linear thinker, like many other engineers.
 - A problem is defined.
 - Examine the process
 - Identify available resources
 - Follow steps to solve it
- As an engineer, I know that this works, but we may be missing many opportunities.
- I am encouraged by the engineers your universities are producing. They are:
 - Unafraid to cross-pollinate ideas

- Thinking outside the organizational boundaries that we are accustomed to
- Highly motivated to solve new and challenging problems
- Based on their education and their exposure to mass media, they are thinking multi-dimensionally.
- This is exciting!

DIVERSITY OF THOUGHT

- **[Slide 7: Heads Together] Innovation:**
 - Comes from looking at a problem differently.
 - Rarely does it come from the first or second thought, but a combination of ideas from different perspectives.
 - Comes from mixing divergent viewpoints and experiences.
 - Bosch's definition of diversity: not traditional sense of race, religion and age and gender.
 - Diversity of thought!
 - And we believe that international experience support that diversity of thought
- Our future lies in the ability of our engineers to:
 - Have a flexible mindset
 - To recognize that while culture tends to shape the lens they look through,
 - they can also find solutions through other people's cultural lenses.
 - And that diversity of thought will help them grow and expand their appetite for innovation.
- To us, diversity needs two elements
 - Diversity of thought
 - An openness to embrace a different point of view.

BOSCH PROGRAM #1: DIVERSITY COUNCIL

- Bosch uses 3 programs to encourage diversity of thought. **[Slide 8: Diversity Council]**
- **Diversity Council, Innovation Framework, and Management Training Program**
- The first is Bosch's Diversity Council
 - The council is responsible to ensure that we create an environment that allows different points of views to be discussed openly in a safe environment and ensures that those diverse perspectives are included in the work that we do.
 - Founded on our core values of diversity and inclusion, and openness and trust.

- Invented for life means designing for people like you and me, but recognizing that we are all very different. **[Slide 9: Bosch Locations Map]**
- Beyond these walls, differences grow exponentially and become even more diverse.
- Imagine the diversity we have among our 360,000 associates.
 - They represent every region of the world
 - Speak a multitude of languages
 - Have varying life experiences.
 - With this background, they:
 - Bring unique starting points for innovative ideas
 - Offer different definitions of the world's problems
 - Come with new perspectives.
- By embracing these diverse perspectives, we are creating a better business,
- Measuring diversity of thought is difficult, but I can share with you how typical measures of diversity influence a company's business performance. **[Slide 10: Green Globe]**
 - Based on a recent February report by McKinsey & Company
 - Companies in top quartile for racial and ethnic diversity are 35 percent more likely to have financial returns above the national industry medians.
 - Companies in top quartile for gender diversity are 15 percent more likely to have financial returns above the national industry medians.
 - (http://www.mckinsey.com/insights/organization/why_diversity_matters)
 - So what I am saying is that....Diversity of Thought IS important to business success.
- Consider Silicon Valley or similar incubators in London, Berlin and Shanghai – just to mention a few.
 - They were developed as places to collaborate
 - They are successful because they attract people from all over the world
 - Bringing diversity of thought.
 - People share ideas, design and create. To innovate.
 - They achieve more together than they could on their own.
- Being global is more than locations around the world.
 - It is about connecting people, creating efficiency in our business and in the innovation process and for, more importantly, learning.
- Bosch's goal with continued globalization is focused on regional competence.
 - Products may begin in a region, based on a lead market demand

- These products are transferred to other regions globally, based on differing market requirements. **[Slide 11: eBike]**
- e-Bikes
 - An eBike is a bike with an electric motor that provides pedal assist – extra power as you pedal.
 - Bosch provides the electric drive unit, controls and display for the global eBike market.
 - Originally, it centered in the European market, where bicycles are part of daily transportation routine.
 - And recently, eBikes have come to the U.S., where the focus is on exercise and leisure, rather than purely on transportation.
 - This is an example of two different regions, each with a different need and focus, influenced by culture and communities.
- The eBike is just one example of how diverse thought and understanding of the market allows rapid adaptation to the base product.

BOSCH PROGRAM #2: INNOVATION FRAMEWORK

- **[Slide 12: Innovation Framework lightbulb]** The second program I'd like to talk about is the Innovation Framework.
 - We created a regional Innovation Framework that we designed – with the support of U-M's Business School – in 2013.
 - Not process. A framework
 - Processes are clearly defined to have repeatable and predictable outcomes.
 - Framework gives supportive environment where innovators can be creative, agile and take risks . . . and even fail.
 - Used to foster culture of innovation at Bosch.
 - Seeks innovative ideas and converts them into investable business opportunities.
 - Similar to a venture capital approach.
- **[Slide 13: Innovation Framework principles]** The Innovation Framework:
 - Provides a safe environment for taking risks,
 - Focuses on customer problem and experience,
 - Encourages alternative solutions,
 - Adopts a “fail fast – fail cheap” mentality,
 - Utilizes the art of presenting or “pitching,” ideas

- And encourages people to work in agile, diverse teams in order to be successful.
- **[Slide 14: Innovation Framework Success]** Successes – just in past year
 - 280 associates participated
 - Generating 330 ideas that were submitted.
 - 20 selected to “pitch” their ideas.
 - 10 selected to enter program
 - The result - More than 50 percent are being funded for further commercialization.
- Success lies in the ability of associates to champion promising ideas and develop them into an investable business opportunity.
- Some of our learnings:
 - Distinct difference between process and framework
 - Both are needed, but at different times and for different purposes.
 - The framework helps us in developing technical solutions AND developing associates.
 - **[Slide 15: Failure]** Benefits of failing – is creating a learning culture.
 - Lessons are learned from every idea in the program; value is applied to the next idea.
 - And failure is the best mechanism for truly learning.
- **[Slide 16: from idea to market – colored puzzle pieces]** Asking our engineers to be innovators.
 - When the project enters the Innovation Framework
 - They enter a 12-week sprint
 - Where the team is focused on the customer needs and defining the problem they are trying to solve.
 - Ask “what’s the path to market?”
 - Innovate even faster by working in groups:
 - Where they go through a process of divergence, iteration and convergence – before off ramping their idea
 - And through this journey toward creating innovation: we want our engineers to release that homogeneous views lead to the same answers to the same problems.

IMPORTANCE OF INTERNATIONAL EXPERIENCE

- **[Slide 17: International flags]** Students and professionals with international experience bring different perspective

- Whether it's an internship in a foreign country
- Working for a foreign firm
- Or, in general, working with people from other countries.
- Related to my career
 - I have worked in Germany with Bosch; and in Brazil with Ford.
 - When I was in school, engineering was not a study-abroad program, but it must be:
 - It's a way to grow engineers' perspectives of the world around them
 - It makes them better problems solvers
 - And higher thinkers
- **[Slide 18: Puzzle pieces]** Diversity of experience creates awareness of our similarities and our differences.
 - Our engineers get beyond inherent biases established by their cultures
 - Recognize and utilize differing viewpoints
 - They see diversity as an asset that can be cultivated, combining several good ideas and making them one great idea.

BOSCH EXAMPLE #3: MANAGEMENT TRAINING PROGRAMS

- **[Slide 19: Collaboration]** The third program that I'd like to talk about is the Management training program.
 - It's composed of the Professional Development Training Program
 - Focused on bachelor-level candidates
 - And the Junior Managers Program
 - Focused on master-level candidates.
 - 24-month programs
 - Which are custom-designed for the individual
 - Uses advice from executive mentors.
 - Four 6-month rotations, creating diversity through exposure:
 - Prepare associates for cross-functional and cross-divisional opportunities
 - Provides mandatory overseas assignment
 - Assignments in diverse work environments in the U.S. and internationally
 - In technical centers, corporate offices, and manufacturing facilities.
- **[Slide 20: Community involvement]** We want engineers to see the good in their work
 - But also to have a personal connection.
 - To think beyond themselves to help the community.

- The candidates must have 1 community service day in each rotation
 - Be engaged in the community
 - And see the impact they can have.
- The goal is to have an understanding of our differences and apply problem-solving skills.
- Sometimes solutions involve engineering practices and sometimes interpersonal skills.

INDUSTRY NEEDS AND WANTS

- **[Slide 21: Handshake]** Bosch will hire 12,000 graduates this year globally. We are looking for:
 - Well-rounded engineers beyond technical training.
 - Diversity beyond gender, geographic and socio-economic status
 - Diversity of life experiences.
 - To be interactive and collaborative.
 - Their diversity of thought will bring new waves of developments into the world, solving the problems of the future.
- **[Slide 22: Summary words with bubbles]** Engineers move across the world to help develop new markets or roll out new programs.
 - Each trip makes them better, their team better and our company better.
 - New engineers need more than a common skill set.
 - That's why I am strongly encouraged by the work that you are doing.
 - You are equipping future engineers with the foundation and thirst for learning and expanding their horizons.
 - You help inspire them to solve the world's problems.
 - Without you, achieving our mission of creating products and services "Invented for Life" becomes difficult, if not impossible
- **[Slide 23: Diverse Candidates]** Our ideal graduate candidates have:
 - A lifelong hunger for learning
 - Solid communication skills
 - Ability to collaborate and work with different-minded people
 - Appreciation for divergent ideas, cultures and methods of thought
 - Confidence to take risks and fail and to learn.
- The race for innovation has no finish line.

- Universities have critical influence on how far and fast the world can innovate.
- The further you get students down the path to critical thinking, diversity in thought... and of course – and of course a full engineering skill set – the faster they can ramp up in industry.... and the more time they will have to contribute to impact our world.
- Our industry appreciates the important work you do
 - Developing and readying students to be active contributors to future innovations, so that everyone can reap the benefits.
- Thank you. For the work you are doing here and thank you for your time. **[Slide 24: Title Slide]**