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The Effective Engineer – The Soft Skills

Good Evening. First I want to thank the University of Rhode Island for their gracious invitation and for the honor to speak at this year's Conference. We at BMW first became acquainted with the program here two years ago. The program here is very attractive for global companies, such as BMW, who seek engineering talent combined with language skills.

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As you may know, in 1992 BMW AG announced that we would construct an automotive plant on 1,039 acres in Spartanburg, South Carolina. We began construction in 1993, followed with production start-up in 1994. Our construction and start-up is considered the fastest automotive start-up in history. The facility began producing our 3-series 318 in 1994, followed by our Z3 roadster in 1995. Currently we produce our new Z4 roadster and the X5 Sports Activity Vehicle for the world market only at the Spartanburg facility. BMW has made an investment of 1.9 billion dollars in South Carolina and employ 4,300 associates. Just a few weeks ago, we announced the hiring of any additional 400 positions and an additional investment of 400 million dollars. To support BMW's production in Spartanburg, there are 33 suppliers located in South Carolina.

The sales from the BMW Group continue to break previous sales records, even at a time when our economy is struggling. Among our success factors are (Slide 3) design, technology and people. Finding and developing employees with the right skill sets, we have found, is often the “deciding factor” for success at both BMW and our suppliers.

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As many of today’s businesses become more involved in technology in some form, employees with technical and engineering skills have become more valuable in a wider range of functions. And as companies become more global, language skills are highly desirable, and now required in more positions as compared to ten or even five years ago. However, today, for a company or an individual to be effective and successful, a combination of skills is required. One may have an excellent knowledge base in engineering or technology, perhaps even a Ph.D. and maybe bilingual. (Slide 5) But if that individual has not developed good skills in communicating, interacting and people resource management, they have already limited their opportunities and chance of success. It is not so uncommon to find someone without a Doctorate degree in a senior level position, managing those who have more advanced degrees. This person typically has skills that enabled them to put together the right team, with the right direction and approach within their respective fields.

For those of you familiar with Dilbert – the hapless engineer, he is often portrayed as the engineer with no social skills – a common cliché. (Slide 6)

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In a company, such as BMW, engineers are highly desirable in many functions, not just engineering. Currently we have engineers in Purchasing (60 to 70% are engineering or technically degreed), quality, logistics, and manufacturing. It is a significant advantage to have associates with a strong technical background in these functions, because the components and processes utilized are highly technical. (Slide 8) Unlike Dilbert the engineer, being assigned to the quality group is a benefit to both the company and the individual, as it increases the capabilities of both. (Slide 9) An associate who is flexible, skilled and open to working in a variety of functions is often of the most value to a company. And since we are a German owned company in constant communication with our parent company in Munich, language is not only desirable, but required in many positions. For example, only one associate in my group is not bilingual; language is required in all other positions. But this is still not enough to be truly effective in most organizations. As we often deal with personnel on a senior level, staff level and on the production line, the ability to work with a wide variety of personalities, cultures and values is imperative to carry out our responsibilities. And if one wants to advance to higher positions within his company,

technical knowledge alone will not ensure that you will be considered for many of the opportunities.

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Engineer on Ground/Golfer in Balloon

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So simply put, if you want to have a variety of opportunities and/or to “climb the ladder”, you must not only be skilled in your area of expertise, but be flexible and have, what is often called the “soft skills”. These soft skills are needed to maximize your effectiveness within an organization, especially if you are considering any kind of leadership role. These skills I have often found are the most challenging to find or develop in an associate.

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In a study conducted by the Corporate Leadership Council in Washington D.C., ten “key observations” were noted based on a study of more than 8000 leaders from 31 companies.

Among these observations were:

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“Leaders consider people-management skills as the most important attributes of effective leadership, followed by strategic-management skills.”

“Feedback and relationship-based development programs are viewed as more effective than on-the-job experiences which in turn are viewed as more effective than education-based programs”.

When leaders were asked to select the most important attributes to effective leadership, the distribution of characteristics were as follows:

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- People Management 29%
- Strategic Management 21%
- Personal Characteristics 17%
- Process Management 16%

Among the people management skills were:

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- Clearly communicate expectations
- Recognize and reward achievement
- Inspire others
- Put the right people in the right roles at the right time
- Persuade and encourage others to move in a desired direction
- Hold people accountable
- Strong commitment to staff development
- Correctly evaluate the potential in others
- Strong commitment to diversity

And when leaders were asked to list the 10 characteristics most important to the effective leadership many of these people management skills were listed. But note also the other characteristics listed.

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- Honesty and integrity
- Clearly communicate expectations
- Recognize and reward achievement
- Adapt to changing circumstances
- Inspire others
- Put the right people in the right role at the right time
- Passion to succeed
- Identify and articulate long-term vision for future
- Persuade and encourage others to move in the desired direction
- Accept responsibility for successes and failures

Again, these characteristics not only apply to an existing leader, but to those who aspire to come into a leadership role. And many of these characteristics can apply to any position to maximize one's effectiveness in his function.

And I can tell you from my experience, these points are definitely on target.

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In early September, the Wall Street Journal published an article entitled “Playing Well With Others” (Monday September 9, 2002). (Slide 18) The article states “recruiters say the “soft” skills – such as leadership, communication and the ability to work in teams – are just as important as the hard stuff. And a lot harder to teach.” This article focused on an evaluation of how well business schools were teaching these skills – the evaluation and interviews with recruiters did not reveal a very positive picture. The Wall Street Journal/Harris Interactive Survey rated 24 attributes – the top ranked attributes were: (Slide 19) communication and interpersonal skills and the ability to work well in teams, followed by leadership potential. The article goes on to quote Geoffrey Hitch, who teaches an acting class for M.B.A students at Carnegie Mellon. (Slide 20) “Number crunching dominates the personalities of many of the students here who come from engineering and mathematics backgrounds; it is my job to remind them they’re human. It’s the human impression and connections that really matter in business. The acting class is part of the leadership and communication instruction.

Even though the article focused on developing soft skills for M.B.A. students, the same statements can apply to other disciplines such as engineering. (Slide 21) “M.B.A. students may get by on their technical and quantitative skills the first couple of years out of school, says Rob Greenly, the new director of

leadership at M.I.T.'s Sloan School of Management, but soon, leadership and communication skills come to the fore in distinguishing the managers whose careers really take off”.

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A book published in 2001 – “Good to Great” by Jim Collins explains why some companies become highly successful for a sustained period of time. The second chapter deals with Leadership and the attributes of successful people in an organization. The book describes various levels of leaders, Level 5 leadership being the highest. Among the attributes:

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- Ambitious, but first and foremost for the company, not themselves
- Development of successors
- Modest and understated
- Fanatically driven to produce sustained results
- Workmanlike diligence
- Attribute their success to factors other than themselves, but take full responsibility when things go wrong

The book continues in explaining that those most successful were highly skilled in working with teams and surrounding themselves with the right people and supporting them to achieved even more than the leader himself.

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But whether you desire to become a leader or not, at some point you will work within a team, perhaps in a design and development project or in implementing a process. Working as a member or a team or as a leader of a team, “Emotional Intelligence” is often considered a more successful indicator to success than one’s IQ. In the Harvard Management Update of December 2001, an article by Steve Barth described how to maximize the talents and skills of individuals working within a team or organization. Psychologist, Daniel Goleman, co-chair of the Consortium for Research on Emotional Intelligence in Organizations at Rutgers University describes the importance of interactions within a company. He states that companies cannot ignore people interactions and emotions. Two of his books, *Emotional Intelligence* and *Working with Emotional Intelligence*, describe how this process works. He also goes on to state that (Slide 25) EI, Emotional Intelligence accounts for as much as 70% of individual performance, whereas cognitive ability and technical learning account for 30%. This proportion may be a little extreme and may not be correct, but in any case the research certainly shows that emotional intelligence plays a significant role in one’s effectiveness in interfacing with other individuals. Dr. Sandra Yingling, of the Hay Group also quoted by the Harvard article states that emotional intelligence is (Slide 26) “not just a warm-and-fuzzy”. “It unlocks productivity and creativity in a

way that nothing else does.” A tool now used by many companies, was developed by psychologist Daniel Goleman and the Hay Group to assess “self-awareness, self-management, social awareness and relationship management”. This tool, The ECI-360 (Slide 27) splits these areas into “18 different competencies”, including “ self-confidence, adaptability, emotional self-control, and managing conflict. We at BMW use this test as a development tool for many of our professionals and managers, because we understand the importance of the “soft skills” in the success of both the individual and the company.

There are many other studies regarding the importance of the soft skills. But, as an engineer, perhaps you intend to stay in a pure technical path within a university or a research firm and have no aspirations for becoming a leader. But as I hope you can see, the attributes listed tonight apply to any position or function.

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Bottom line –

If you want a variety of opportunities or want to come into some type leadership role, regardless of the level, your soft skills will most likely be the most significant enabler. Again, as more companies become more technically oriented, and as universities more closely linked with industries, an engineering degree is a

significant advantage, and if you work for a global firm, language skills are a must for many positions. But if you want a variety of opportunities, or want to become a leader or simply want to optimize your effectiveness in any position – soft skills are a must!

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Again, thank you for the kind invitation.