

ACEN ANNUAL CONFERENCE – 2011
HOW TO GROW PROFESSIONALLY – FOCUS
ON THE ENGINEER

By

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What is Engineering?



- Funk and Wagnalls Dictionary

Engineering is the general art dealing chiefly with the application of scientific knowledge for purposes useful to mankind

Who is an Engineer?

- **Wikipedia**

An engineer is a professional practitioner of engineering, concerned with applying scientific knowledge, mathematics and ingenuity to develop solutions for technical problems. Engineers design materials, structures, machines and systems while considering the limitations imposed by practicality, safety and cost. The word *engineer* is derived from the Latin roots *ingeniare* ("to contrive, devise") and *ingenium* ("cleverness")

Who is an Engineer?

- **A MacPherson (1951)**

The training of engineering deals with exact sciences. That sort of exactness makes for truth and conscience. It might be good for the world if more men had that sort of mental start in life, even if they did not pursue the profession. But he who would enter these precincts as a lifework must have a test taken of his imaginative faculties, for engineering without imagination sinks to a trade. And those who would enter here must for years abandon their white collars except for Sundays.

Characteristics of the Engineer?

- **Must be an Intellectual**
- **Possess the faculty of understanding either by reason or perception**
- **Have a philosophical or scientific mind**
- **Ability to perceive things rationally as comprehending their relations, laws and profound meanings**
- **Possess basic academic qualification and training**
- **Have a broad theoretical knowledge cutting across the arts and sciences**

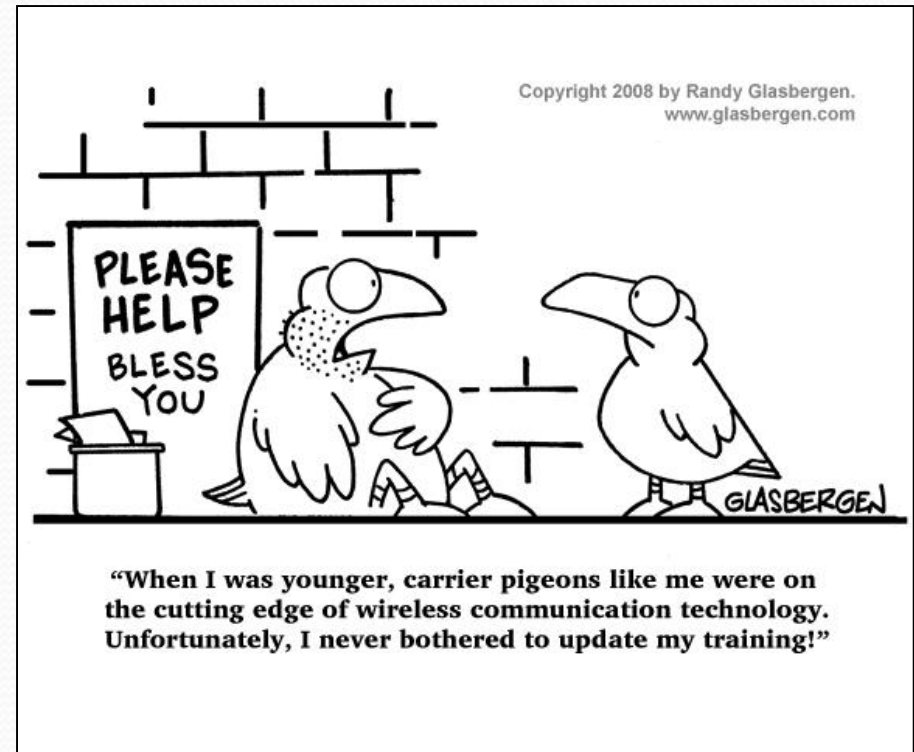
Present Realities



- **Less job security – hence worker mobility in finding the right job and employer**

Present Realities

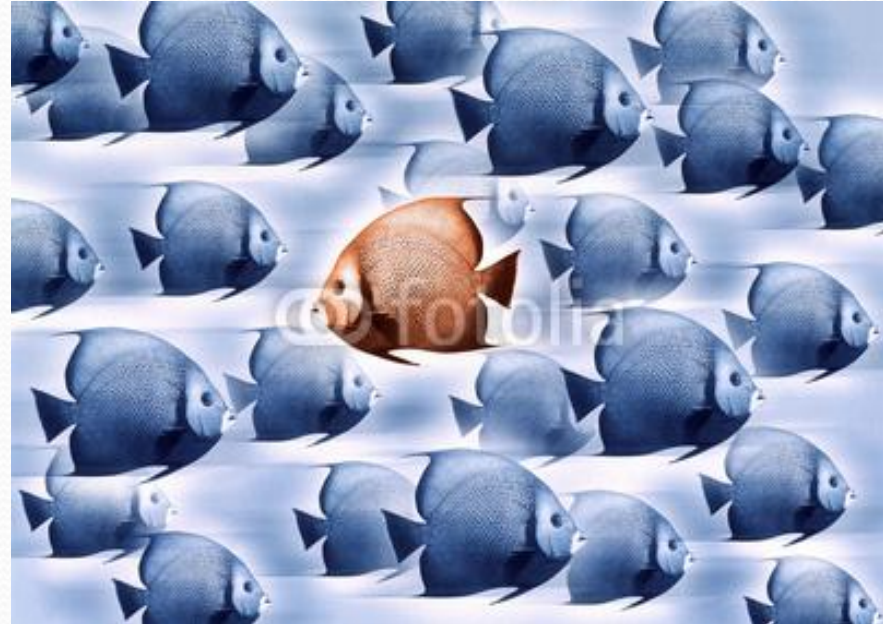
- Promotion is no longer linearly upward – hence flexibility, adaptability and creativity are necessary for job satisfaction. Need to consider expanding scope and responsibility



- Technical knowledge and skills obsolescence – rapid advancements in technology demand continuing upgrade of skills and retooling of self in order to stay relevant and useful

Developing or growing professionally

- Professional development is a necessity
- This is against the norm of society. To grow, the engineer may need to swim against the tide.



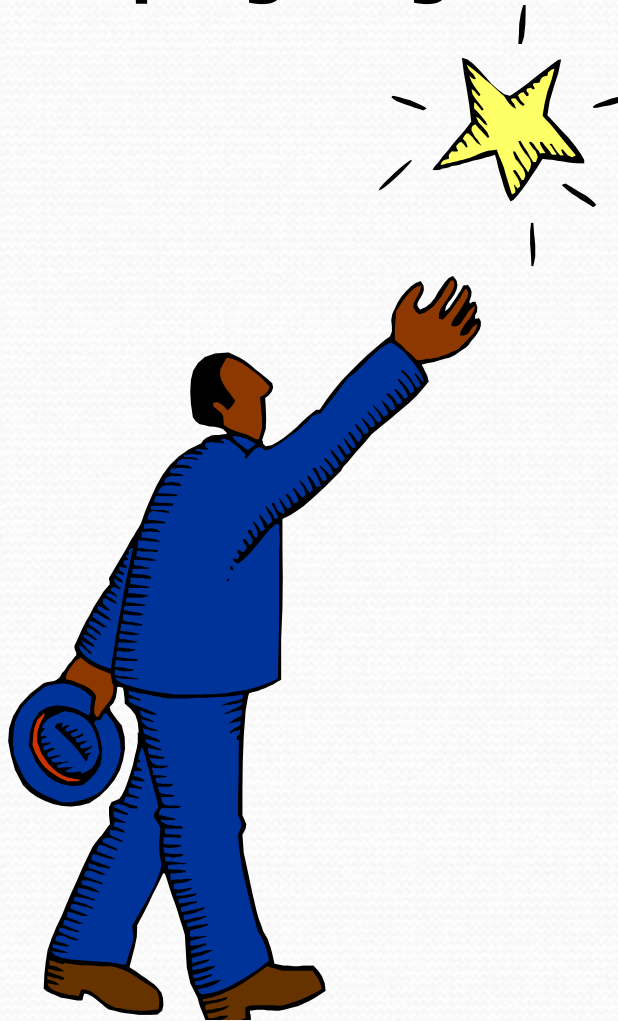
- *Everybody is going this way, why be different*
- *Rely on good luck and not hard work*
- *Why be a perfectionist when things can be managed*
- *There is always an easy way to life why the stress*

Developing or growing professionally

- **The engineer who will develop will need to be different**
- **He will stand out from the crowd even while still a part of the whole**



Developing or growing professionally



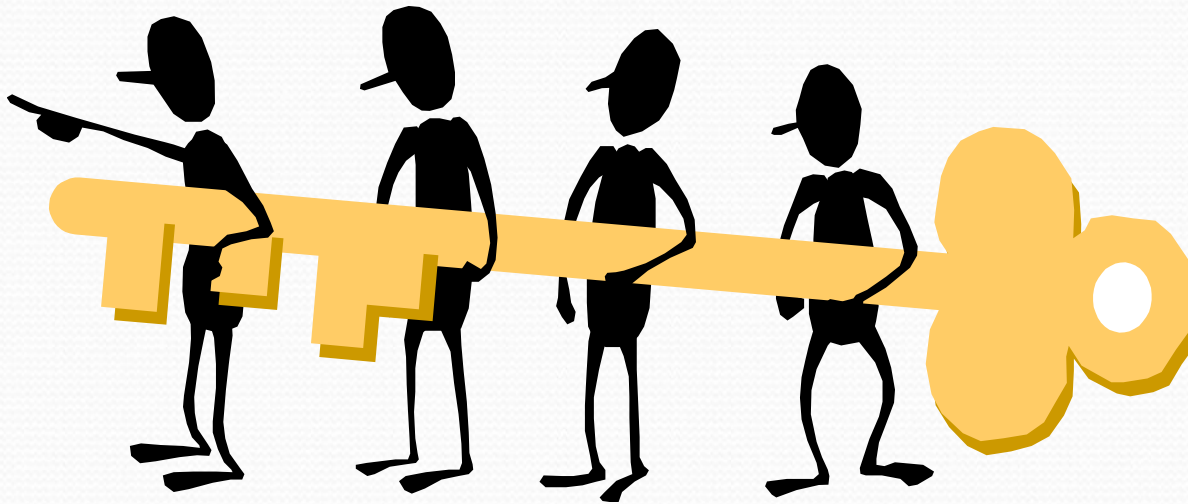
- **Professional development starts with the will.**
- **There has to be a desire to excel**
- **His goal is not mundane or fleeting i.e. he is not chasing shadows**
- **He desires to be an achiever**
- **He reaches for the stars**

Developing or growing professionally

- **Professional development demands effort and perseverance**



Developing or growing professionally



- **Professional development is best achieved in a team. However there is a willingness to walk alone if need be.**

What is the developmental desire?

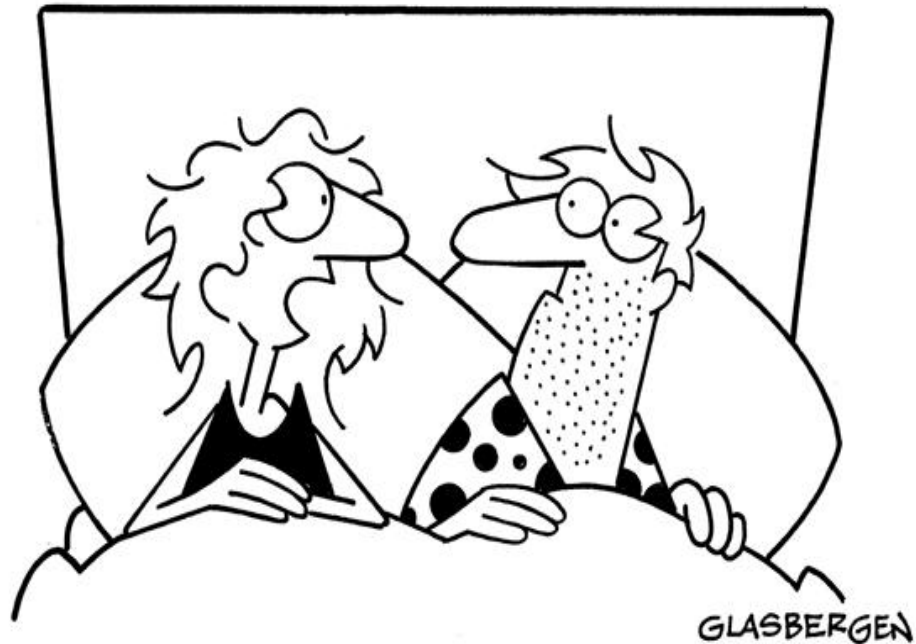
- To excel – be the best
- To contribute to the wellbeing of the organization and/or society
- To leave a legacy



Develop the skills – Interpersonal skills

- Relationships
- Communication
- Respect
- Ability and willingness to learn
- Sense of humour
- Humility

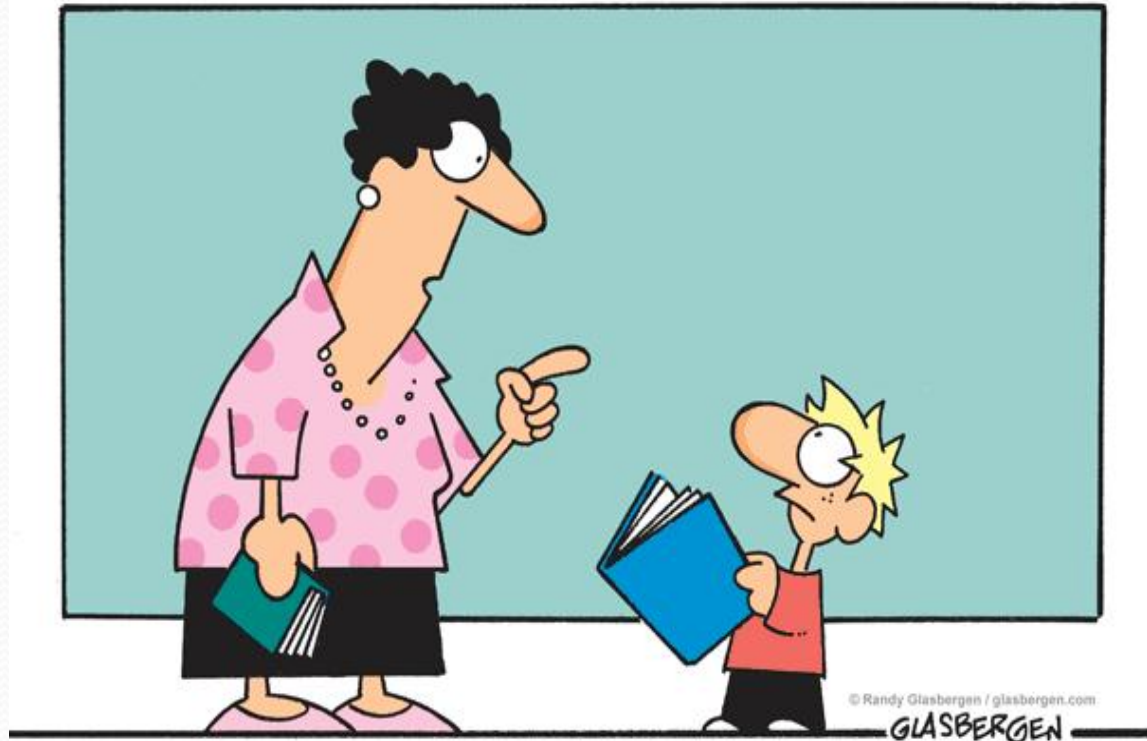
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“Would you please ask the women in your dreams to stop texting the men in my dreams?”

Develop the skills – Competence

- Reading and learning
- Do not be afraid to make mistakes but desist from remaining a mediocre
- Take responsibility



“It’s called ‘reading’. It’s how people install new software into their brains”

Develop the skills – Competence

- Inquisitiveness – why, how, what, when
- Continual improvement



“What program does God use to upload the sun every morning?”

Develop the skills – Dependability

- **Morality and trust**
- **Time consciousness**
- **Quality consciousness**
- **Promise consciousness**
- **Team player**
- **Less of excuses**

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"I don't have my homework. My dog deleted it."

Develop the skills – Mentorship

Get a mentor



Be a mentor

Develop the skills – Values

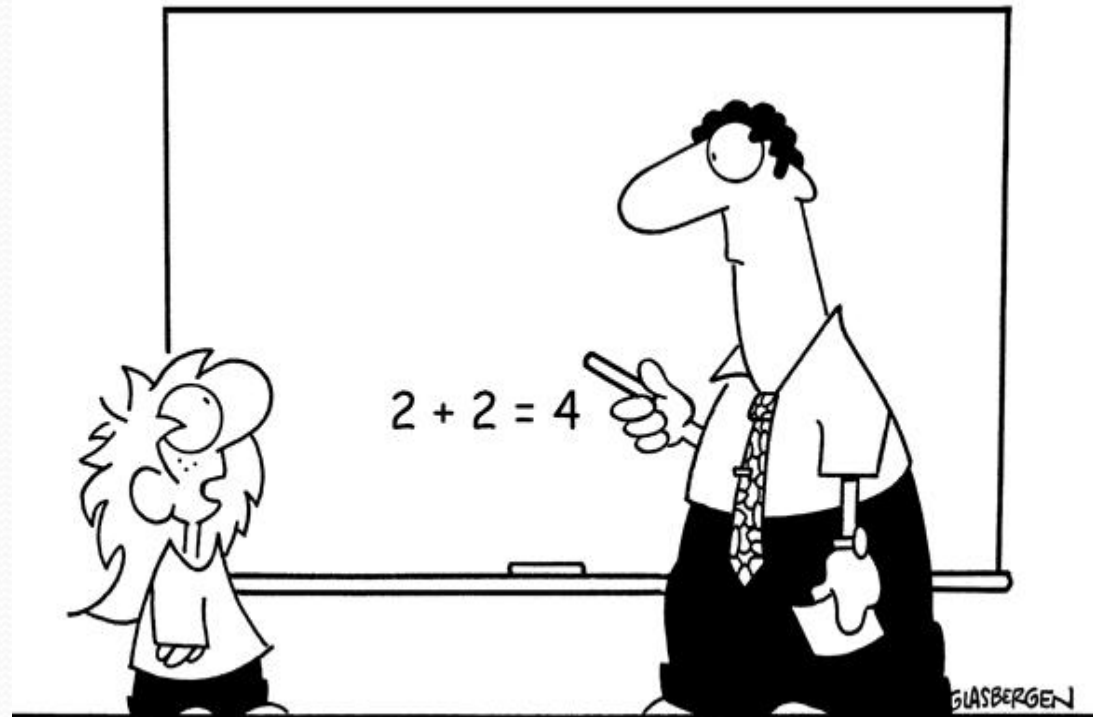
- **Have a sense of worth**
- **Be hopeful**
- **Love your family**
- **Trust God**



Evaluation

- Evaluate
- Re-evaluate
- Make changes if necessary

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“How can I trust your information when you’re using such outdated technology?”

Results

- **And he shall be like a well watered garden...**
- **You will be pleased with yourself**
- **You will bring pleasure to others**



Challenges

- When those in engineering are not engineers
- What happens when the struggle is still to meet the basic human physiological and safety needs

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“They’re making great progress in biological engineering.
How do you know money doesn’t grow on trees?”

Models of the Engineer

- **The tremendous staying power and goal seeking drive that the creative individual exhibits is mainly due to his ego involvement of the highest order He is ready to engage in meaningful problem solving purely for the satisfaction it gives him even when no other reward lays ahead (Eugene Randsepp 1963)**

Models of the Engineer

- **Certainly the successful engineer is one who can bring to his work the largest and most wide-range problem solving abilities and many of the most important problems he must face are those whose answers will not be found in his engineering courses.**
- **These are the problems concerning people, sociological needs, aesthetic judgments and political decisions.**
- **The complexity of our society today makes an engineer who cannot handle such problems, not only limited, but dangerous (Whitlock and Edingbon, 1961).**

Question

- Are these models of the engineer still valid?
- Or is there a dichotomy of ‘old school engineers’ and ‘Facebook engineers’?

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“Any other people skills, besides 400 Facebook friends?”

Develop the basic skills –Hope

- **Engineering is still a beautiful field**
- **The engineers still bring fragrance and beauty and comfort to our world.**





Thank you

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