WHAT MANAGERS AND LEADERS NEED TO KNOW TO SUCCEED

WHAT MANAGERS AND LEADERS NEED TO KNOW TO SUCCEED
Mechanical engineers possess many of the natural qualities that make great leaders. They’re expert problem solvers – determined and driven to make things work and get the job done.

But what about when it comes to their own careers? The propensity to focus on the task in hand can mean that many mechanical engineers lose sight of the bigger picture and of where their abilities could take them.

There has never been a greater need for mechanical engineers to step up to the mark and take on managerial roles. This will undoubtedly involve developing new skills – perhaps becoming more people-focused or commercially aware – and awakening aspects of their nature they have never explored before.

At the Institution of Mechanical Engineers we are experts in understanding what makes people in this industry tick, and our training is tailored to address the challenges they face when moving out of their comfort zone. If you’re left to sink or swim, it can be a tough and lonely place. But with the right sort of help and coaching, an exciting world of new possibilities awaits.

A natural propensity for ‘left-brain thinking’ shouldn’t preclude engineers from developing greater management and leadership skills
There’s a difference between ‘born’ engineers and ‘made’ engineers,” says Penny Taylor, trainer and Fellow at the Institution. She places her ex-husband firmly in the first category and herself in the second. Her husband had no engineering qualifications, but had great natural technical skills, spatial awareness and a fascination with how things are put together, explains Taylor. “Within two seconds of entering a hotel room he would be taking the light switch to pieces to see how it worked,” she recalls.

By contrast, she excelled at maths and physics but her only ‘natural’ engineering aptitude was making cheap bolts of fabric into garments. She went on to study engineering at university: “They saw something in me they could train,” she says.

She does admit, though, to having the engineer’s ‘left-brain’ focus: “I’m very rational. I tend to see the world and its components as a black box, with an input and an output.”

Twenty years ago Taylor helped to design and run a Masters Degree in automotive engineering at the University of Hertfordshire. Nearly all the students came out as ‘ESTJs’ (logical, fact-based, practical, autonomous) on the Myers-Briggs Type Indicator, she says, whereas the ‘ESTJs’ – the same as the ISTJs, but extrovert rather than introvert – opted to do MBAs.

In the world of engineering, as elsewhere, the first group tend to be the technical specialists, whereas the second make good project managers, explains Taylor, adding that career success depends on understanding what you’re best at.

But while playing to your strengths is the best approach, you do sometimes have to move out of your comfort zone, believes Taylor. “It worries me the amount of time people spend behind their computer screens,” she says. “Open-plan offices are supposed to encourage people to talk, but in many cases they seem to achieve the opposite.”

Arguably, line managers ought to recognise that many management practices – including open-plan offices – are not suited to introverts’ preferred ways of working, and find other ways of helping them to be productive. Introverts, as Susan Cain points out in her book Quiet, make up around one-third of the population, but although they have just as much to contribute, their views can go unheard. “What’s more, if managers are to create ‘balanced’ teams, they need to be able to manage a range of different personality types.”

Taylor explains: “I did some work with a team of very gregarious purchasing managers and they decided they needed someone on the team who was more stable to counter their ‘seat of the pants’ approach. At first it went well, but then they stopped inviting him to meetings because he threw a dampener on all their ideas.”

Taylor believes that all teams need a spectrum of personalities, and that appointing ‘professional managers’ to lead engineering teams is a positive trend.

“Sometimes an engineer is promoted into management and the net effect is a lost engineer and an incompetent manager,” she says. “Technical specialism is very different from management expertise.”

A welcome change, she believes, is the move by certain companies – Rolls-Royce, for example – to create ‘technical specialist’ career branches that allow people to win promotion without going through the management route.

It’s a question of horses for courses, explains Taylor – but each horse needs to know the route that lies ahead: “You can coach people into management roles, but they have to understand how different the job is before they commit to it.”

Most research into different types of brains is focused around gender. “Beyond that level it gets too difficult,” Taylor says. Amy Brann, author of Make Your Brain Work, agrees. “People are born with different gifts, but I know of no research that proves that engineers are born with different brains,” she says. “However, we do shape our brains through our lifestyle and what we choose to do.”

The concept of ‘neuroplasticity’ is relatively new. Researchers have found that if we train our brains to behave in certain ways in certain situations, the neural networks governing those behaviours are reinforced and embedded through repetition. But because the brain is infinitely elastic, you can override a propensity for left- or right-brain thinking (‘logical versus creative’) and train your brain to do other things. This may be easier said than done, as David Rock, author of Your Brain at Work, writes.

“For some people who build their neural maps around logical systems such as computers or engineering, the uncertainty of dealing with people can be overwhelming.” But good teamwork is necessary, he believes: “The capacity to collaborate well with others has become central to good performance in just about any endeavour.”

The trick, believes Rock, is to find out more about your own brain. He discovered that teaching employees about their brains made a big difference to their performance – “and often to their lives too” – which motivated his book. So logical engineers could be more creative than they think they are – if they just tried.
In a high IQ job pool, soft skills mark those who emerge as outstanding. What set of behaviours makes the best leader? It’s a question that trainer at the Institution Andy Webber is often asked, and he reels off his response with practised ease. “You need someone who is driven, focused and determined, while being charismatic, personable, and managing relationships well. They need to be a good listener who ensures that everyone in the team is OK, but at the same time is very detail oriented.”

It’s a lot to expect of any individual – in any sector. Webber himself is quick to point out that anyone moving into a management role will need development in certain areas. “Leadership tends to be a reward for competence in your functional role,” he observes. “Whether the functional role has skills that are consistent with leadership or not is irrelevant.

“Typically, engineers are problem solvers who like to take things apart and put them together again to understand how they work. And that’s part of what a leader needs to do. The other aspect of leadership is
to understand people, and be able to motivate and coach. These tend to be the skills that engineers need to develop – but that’s the same for anyone who becomes a leader.”

“Many are suspicious of it,” says Webber. “They think of it as a test, or a test of street cred. In reality, it is the ability to understand and manage your own emotions and the emotions of others.”

In leadership, Thompson believes that EQ can only get you so far without the softer skills of relationship building. A high EQ encourages the empathy that enables a person to recognise not only their own strengths and weaknesses, but also the needs of others. This is particularly relevant in the engineering sector – where people’s IQ is rarely called into question – as Thompson believes it is the ability to work more effectively with other people that can help catapult careers to new heights. “Engineers can plateau at a certain level because of their desire to be involved in the detail of everything. Developing their EQ helps prevent them from working in isolation,” Thompson says.

“Engineers want data, facts and evidence, so can struggle with embracing emotions. It’s too soft and fluffy for them,” she says. “At the Institution, we address the subject in a way that helps them to accept it. “Many are practising EQ already and just don’t know it. Our job is to raise their awareness so that they can recognise the strategies and repeat them.”

Factors for Life Success

Other sources

Daniel Goleman brought the idea of emotional intelligence to attention in 1995 and the strategies and evidence-based research that it works. DiSC is a trait tool rather than a personality tool. Its main purpose is to demonstrate that everyone is different, and that those differences need to be taken into account when working with other people.”

In DiSC terms, the typical patterns for the ways engineers think, act and interact tend to be Ds and Cs – Dominance and Conscientiousness – or a mix of both. The ‘best leader’ that Webber described earlier combines all four DiSC styles.

“What makes somebody a good leader is the ability to develop the qualities they don’t have naturally to become an all-round mix of all four DiSC styles,” Webber explains. “By nature, engineers are good at getting things done. What they need are the softer skills on the people side.”

Webber believes that training groups of mechanical engineers together, as the Institution does, brings the benefits of a shared set of values that enables delegates to learn, network and support each other. And their learnings are shared across continents. Webber travels the world as a trainer, bringing a broad, cross-cultural awareness.

“More than many other training organisations, the Institution offers a vast experience of how people work in different parts of the world. It’s not an official part of a course, but the question of cultural differences usually ends up being discussed. People on the course will be from different backgrounds, and as managers they will then be leading people from different backgrounds.”

Trainers at the Institution, such as Webber, also have an acute appreciation of another aspect of the engineering sector that exerts very specific demands on managers – remote working. “Many teams work in satellite offices,” says Webber. “We have a good understanding of the challenges of working virtually.”

Although not from an engineering background himself, Webber can both relate to their needs and challenge their views from an outside perspective. “A management role can come as a bit of a shock as they struggle with letting go of the day-to-day tech.” That’s the challenge that Webber can help them overcome. •
Leading a team means tackling difficult conversations. You’ll need to turn potential conflicts into positive dialogues.

It’s one thing being good at your job; it’s quite another thing helping other people to be good at theirs. But that’s what happens when you are promoted into a management role and leadership skills have not routinely been taught. People have had to learn the hard way.

That way is even harder for engineers than for most people, as Phil Millard, product development manager of TNA Europe Ltd, which manufactures industrial equipment for the food industry, explains.

“Typically, engineers’ thinking centres around tasks, whereas leadership is about emotion,” he says. “In our minds we break down conversations into small pieces of information in ways that allow us to answer each with a yes or a no. Being plunged into a leadership role, which is about shades of grey, not black and white, can be difficult.”

After 20 years “thinking purely about engineering problems” Millard found himself two years ago in charge of a team that has grown to 14 people. Initially, the experience was a baptism of fire, and he faced a number of difficult conversations with members of his team.

One member was consistently under-performing,” he recalls. “I tackling it initially by giving him slightly smaller tasks, so he had less information to process in one go. I was very positive: the way I couched it was, ‘We appear to be making mistakes here and we need to find ways of working better’. That approach works very well with engineers, who generally hate making mistakes.”

But after a temporary improvement, the individual’s performance deteriorated again, which led to a second conversation.

“I sat him down and said, ‘We’ve tried to help you technically to improve, and that’s not helped, so is there a personal problem we can help you to deal with?’ I told him if he didn’t want to work for us, we could find an exit strategy that allowed us to part on good terms. But the guy just apologised and said ‘I can and will do better’.”

But after another temporary improvement, the man’s performance deteriorated again, and the company decided that he would have to go. “We’d spent four months trying to help him improve his performance. But it was only at his exit interview that he blurted out that he’d been having family problems, and that being able to spend some time at home trying to sort it out would be very helpful.”

Another difficult conversation involved a female engineer who wanted to work flexibly in order to pick up her children from childcare. “She is a good engineer and we don’t want to lose her,” says Millard. “But the project she is working on requires all the engineers to be in the office at core hours to support each other. I told her she could work in the office until 3pm rather than 5.30pm, but it would be likely to affect the quality of her work. We kept going backwards and forwards, and in the end we compromised with a four-day week, which is not ideal for her, but we offered her childcare vouchers, which helped.”

In both conversations, Millard was trying to find a good solution for the individuals involved and to keep the dialogue as positive as possible in order to prevent them putting up barriers. “It’s about negotiation, which doesn’t come easy to engineers, who are used to rules. Everything suddenly is up for debate,” he says.

A third conversation has proved less fruitful.

Millard explains: “I work closely with a fellow engineer, and when we’re focusing on the same task we come up with some amazing solutions. But I also have to manage him, and he refuses to work extra hours. We can end up shouting at each other and he strolls out.”

...SAYING NO, NOT YES. IT IS VERY EASY TO SAY YES

Tony Blair
The greater your understanding of what people want in their life and from their work, the greater your chance of getting them to work in the way you want them to,” says Wadeson. “If they see that you are capable of doing the job you are asking them to do, and if you allow them to express their feelings, get involved in decision-making and make mistakes, you avoid conflict.”

Wadeson worked his way up from the engineering shop floor and, he admits, it took time to adjust. Among the lessons he’s learned is how much easier it is to handle potentially tricky conversations in an open environment: “People have to feel relaxed and able to talk, or they put up barriers.”

When dealing with a dissatisfied customer, Wadeson believes it is essential to keep both customer and employee on your side. “It comes down to allowing plenty of time to talk about the problem (even though you might decide in the first 10 minutes what it was), making each feel that you are on their side, and asking the right questions to establish what went wrong. The employee has to some out of it feeling as though they’ve learned something, and at the end of the conversation we may even change our own procedures. And we communicate that to the client.”

Millard, who found his first difficult conversation so challenging that he turned to the Institution for some bespoke leadership training (see right), believes engineers need ‘emotional inputs’ into their ‘black boxes’ in order to get better outputs. “Now that I have started to apply what I’ve learned I’m seeing positive results. Yes, I do less engineering work, but the people around me understand more and they are more productive.” •

How leadership training can help

Millard turned to the Institution for some bespoke leadership training for himself and his colleagues, focusing on people, culture and emotion. One particular slide stands out – a pyramid, with three layers (see left), each representing a level of emotion an individual exposes to their colleagues. At the top is what people talk about all the time – tasks. Beneath it is personality. The bottom layer is ‘morality’ – the values that govern people’s lives.

“The trainer pointed out that it is unlikely that anyone would ever fully explain the bottom layer to their colleagues, and an engineer would keep most of it hidden, even from their spouse,” recalls Millard. “But it is this that drives most behaviour. Just understanding that if you do something that contradicts someone’s underlying morals they will shut down was in itself hugely valuable.”

The training has made a big difference to how Millard manages people. “It guides my conversations – it’s like having an emotional mentor sitting on my shoulder.”

To be successful, you have to have your heart in your business, and your business in your heart

The richest opportunities are open to engineers who augment their technical expertise with commercial acumen.
A lot of time everyone jargon, saves not empty concrete terms, talking in speaking negotiation can teach the art of

How Lock, Stock and Two Smoking Barrels can teach the art of negotiation

Anatomy of a deal

“Whatever their motivation, if engineers want to improve themselves, it makes sense to develop the skills that are most in demand – and those are commercial and negotiating skills,” he says.

However, developing such skills involves a more nuanced approach than most engineers are used to.

“In the commercial world you’re not dealing so much with absolute facts,” explains Pepperell. “You have to ‘read’ particular situations, and try to work out what people are interested in, their motivations, why they might be taking a certain position. That’s a skill that doesn’t necessarily come easily to people who tend to see things in black-and-white terms.”

It may not come easily, but it’s essential. An engineer who’s not familiar with commercial negotiations can easily make the kind of blunders that could scupper a deal – giving away valuable information that the other party could use against the company, for example, or agreeing to things that could bust the budget.

Being prepared is key. “You have to think hard about what you want to achieve, as well as how to achieve it,” he says.

In some cases knowing what you want to achieve is easy. If you’ve developed a new braking system for a car, for example, you know how big it needs to be, the power it requires and what it is likely to cost. But, increasingly, engineers have to fight their corner here.

“Almost all of the clients we work with negotiate with internal customers,” explains Pepperell. The alternative, he points out, is to accept what you are given, which may result in sub-optimal performance – both of the product itself and the car as a whole.

You can learn how to negotiate – but preferably not through your mistakes, which may be costly. And you don’t have to be aggressive or boisterous to get what you want.

“Even the nicest, mildest-mannered individuals can be effective negotiators, because people find it difficult to say no to them,” says Pepperell. “It’s just a matter of understanding a range of tools, techniques and tactics and deploying the most appropriate ones in any given situation.”

Listening
The ability to keep quiet and work out what the other side really wants can be your most important asset.

Speaking
Talking in concrete terms, not empty jargon, saves everyone a lot of time.

Body language
Non-verbal messages can be subtle but powerful. Lean in to the conversation.

Manner
You don’t have to be aggressive to achieve your goals. A pleasant and humorous manner can be hard to resist.

Tactics
Be prepared. Think about what you want to leave the negotiation with.

“What are you likely to want in terms of what you want to achieve, as well as how to achieve it,” he says.

In some cases knowing what you want to achieve is easy. If you’ve developed a new braking system for a car, for example, you know how big it needs to be, the power it requires and what it is likely to cost. But, increasingly, engineers have to fight their corner here.

“Almost all of the clients we work with negotiate with internal customers,” explains Pepperell. The alternative, he points out, is to accept what you are given, which may result in sub-optimal performance – both of the product itself and the car as a whole.

You can learn how to negotiate – but preferably not through your mistakes, which may be costly. And you don’t have to be aggressive or boisterous to get what you want.

“Even the nicest, mildest-mannered individuals can be effective negotiators, because people find it difficult to say no to them,” says Pepperell. “It’s just a matter of understanding a range of tools, techniques and tactics and deploying the most appropriate ones in any given situation.”

WHAT ENGINEERS CAN LEARN FROM GUY RITCHIE

Rather than bamboozle delegates on the Negotiating Skills course with lots of theory, Pepperell roots his training in real-life situations. The lives portrayed in director Guy Ritchie’s crime comedy Lock, Stock and Two Smoking Barrels may be a long way from most people’s reality, but Pepperell uses the film to good effect.

“I show a two-minute clip that portrays a negotiation between three criminals featuring a lot of tactics, body language and other non-verbal messages,” he explains. “This is a very quick way to help them see negotiation tactics in practice.”

Around 75 per cent of the course is practice-oriented. “We do lots of role play and case-study work based on the kind of challenges engineers face every day,” he says. “I always try to keep it really real, and ask them in advance about the kind of situations they want to cover.”

Examples from a recent course include buying and selling a truck, negotiations for influence between two heads of department, salary negotiations, and negotiations between internal finance and engineering teams over the sale and purchase of materials.

Pepperell thinks the reason the Negotiating Skills course attracts consistently high feedback scores is both its practical content and his own commercial experience. He’s not an engineer, but a sales and marketing man with a 30-year career at Nestlé.

“Commercial managers are much more people oriented and emotional than the typical engineer, and at first delegates look at me as though I’m some sort of alien,” he says. “But they soon get drawn in, in a way they might struggle to do were it an engineer trying to teach them. They find it valuable learning ‘the tricks of the trade’ from someone ‘on the other side’.”
THE MOST SUCCESSFUL PEOPLE AND BUSINESSES NEVER STOP LEARNING

The Institution of Mechanical Engineers specialises in leadership and management training, helping talented technical professionals learn the skills they need to become effective leaders and build and inspire strong teams to support them.

Negotiation Skills
Presentation Skills
Communication Skills
Managing Time
Commercial Skills
Innovation and Problem-Solving Skills
New Engineering Manager
APM Project Fundamentals Qualification
Financial Management

Find out more:
Tel: +44 (0)20 7304 6907
Email: training@imeche.org
Web: www.imeche.org/training