



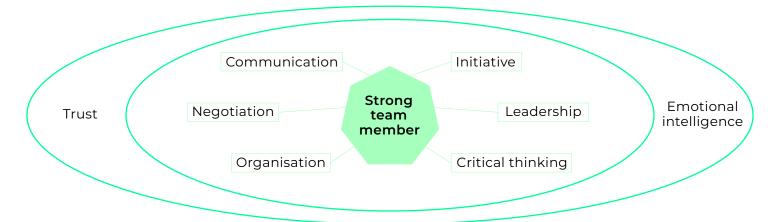


Teamwork in engineering

Teamwork happens when a group collaborates to achieve a common goal or task. The diverse skills, perspectives, and support within strong teams enable entrepreneurs to innovate, deliver, and achieve their ambitious technical and financial goals:

Tech development Prototyping Design Investment Sales Growth

Strong teams have a **clearly defined** goal that every team member supports. They are **cohesive:** members focus on core **task roles** like clarifying goals, researching, evaluating, and decision-making, as well as essential **process roles** like leading, supporting, including everyone, and resolving conflicts. Teamwork therefore depends on a broad range of skills, **shared trust** between members and **emotional intelligence** – the ability to understand and manage your own emotions and those of your team members.



High-performing teams are effective (delivering high value and quality) and efficient (making good use of time and resources). They have an **optimum size** that is large enough to include the necessary skills and experience, but small enough to include everyone's contributions. Aim for the smallest team that delivers sustainable high performance.

Check your understanding:

- 1. List five ways in which teamworking helps to foster innovation or enterprise.
- 2. Suggest why an entrepreneur needs to be a good team member as well as a leader.



Teams, diversity, and enterprise

Successful entrepreneurs rely on creativity, agility, and speed to achieve their technical and financial goals. A key leadership task for an entrepreneur is to evolve the team structure to maintain high-performing teams.

Enterprises start small and are therefore likely to consist of a small, cross-functional team that brings together the founders with new employees that contribute different specialisms:

Cross-functional team		
Advantages	Disadvantages	
fast progress	need to build trust	
innovation and creativity	need to develop communication	
challenge old thinking	views and goals need to align	

As an enterprise grows, so will the team, as new specialisms, experience, and capacity are brought on board. If the team expands beyond its optimum size, the enterprise may need to reorganise around functional teams that group specialists together:

Functional teams		
Advantages	Disadvantages	
depth and breadth of knowledge	slower progress	
efficiency	slower to change thinking	
clear structures	isolation between functions	

Diversity is the practice of hiring and including people from a diverse range of social, cultural, ethnic, or gender backgrounds. **Diverse teams deliver benefits for any enterprise:**

- different perspectives stimulate creativity and innovation
- · improved problem-solving and decision-making
- resolution and progression from any disagreements between cofounders.

The optimum approach for your enterprise will bring together skilled professionals from a diverse range of groups and backgrounds. These people will work in team structures that allow every individual and team to thrive within the best mix of functional and cross-functional teams.

Check your understanding:

- 3. Suggest how an entrepreneur might make the best use of a combination of functional and cross-functional teams.
- 4. Draft a brief email to a cofounder outlining the benefits of a diverse hiring policy.



Building your personal network

The people in your personal network provide you with support, guidance, and opportunities, and you do the same for them. Building a strong personal network is an essential task for any entrepreneur. Your network provides you with many benefits.

Technical	Personal	Strategic
access to deep expertise Eg solving a technical challenge or getting financial advice	 access to experience and wisdom Eg advice when developing your leadership 	 access to opportunities Eg providing a 'warm' introduction to a possible investor or customer

As you progress your career, or make the leap into enterprise, you will need to grow and adapt your network to support your changing needs.

Learner	Employee	Entrepreneur
 family tutors industry placement contacts other learners members of sports clubs and hobby groups 	Learner network plus: direct colleagues line manager past colleagues or managers informal colleagues from other parts of the business	Learner and employee network plus: • enterprise hub or network members and leaders • professional bodies • local business groups • mentors

Your network is a web of personal relationships that you must strengthen and maintain. To help do this you could:

- seek a diverse and inspiring personal network
- · aim for quality and depth, not just quantity
- keep in contact and share information and links that might help other members, but be selective and only share what is genuinely valuable or interesting
- give to your network as well as take from it, and offer help when others need it
- connect people with each other to help them grow their networks.

Networks are built on integrity and trust. Your behaviour or performance affects the reputations of those who help you. Be the person you would want to have in your own personal network.

Check your understanding:

- 5. List or draw your personal network. Identify who you can help as well as who can help you, for example, to find a job or progress a startup idea. Be as specific as possible.
- 6. Research what professional bodies or enterprise hubs you could join to expand your network.





Case study: Teamwork for innovation

Background

You are a department head in a large engineering company. The board of directors has voted to launch and build a new innovation team and has asked each department head to suggest a way forward. The board has not defined a goal for the project, but has stated that:

"Our vision is that the new innovation role will guide each department to become the best in our industry, contributing to rapid product development and growth."

Several other department heads have decided to discuss ideas within their departments to present to the board. You disagree and want to push hard for a cross-functional team.

Your task

- 1. Write a brief response to your colleagues highlighting the benefits of starting with a cross-functional team.
- 2. Create a table to describe six skills or personal qualities you think all candidates should be able to demonstrate when you interview them for the team.
- 3. Suggest a unifying and inspiring goal that will help to build a cohesive and effective innovation team.
- 4. Suggest to your colleagues why each team member's personal network might also be a valuable asset for the innovation team.



Extend your learning

Identify what team projects you may have to complete as part of your course. How could you agree your own unifying and inspiring goals? Identify what skills and personal qualities your team will need to demonstrate to carry out important process roles such as negotiation, conflict resolution, including everyone, and sharing the work.



Answers: Check your understanding

These are example answers – your own suggestions may differ.

Teamwork in engineering

- 1. Five ways in which teamworking helps to foster innovation or enterprise include:
 - Cross-fertilisation of ideas from different specialisms provides greater creativity.
 - A wide range of perspectives will help solve problems or overcome challenges.
 - All employees are aligned towards the same goal(s).
 - Support for one another improves morale and productivity.
 - Better risk management is achieved through discussion.
- 2. An entrepreneur needs to be a good team member as well as a leader because they are there to support their team as much as the team is there to deliver the entrepreneur's vision. The entrepreneur should help every team member to perform at their best so the enterprise itself can thrive and succeed.

Teams, diversity, and enterprise

- 3. An enterprise or scaleup will make the best use of a mixture of functional and crossfunctional teams by identifying the situations when each type of team would be most effective. For example, a functional technical team will develop significant depth of knowledge and make rapid progress but, when the enterprise needs to apply that technology in customer products, a cross-functional team will bring wider perspectives, creativity, and innovation.
- 4. A brief email to a cofounder outlining the benefits of a diverse hiring policy might say:

"Hi Zoe, putting diversity at the heart of our hiring policy will bring us many benefits. A diverse team will better represent our possible customer markets. We get access to the best talent on offer, to build the best team. We'll get different perspectives that increase our creativity and problem-solving."

Building your personal network

- 5. Your personal network will include tutors, industry contacts from placements, other learners, friends, and perhaps also family members or family friends who can provide openings or advice.
- 6. Search "enterprise + your location" for local enterprise hubs, partnerships, or other organisations that can offer support. All the engineering professional bodies in the UK offer student membership options.



Answers: Case study

These are example answers – your own suggestions may differ.

- 1. Building a cross-functional team from the beginning will deliver many benefits. A new team can develop the culture needed for innovation and minimise different functional areas competing against one another or working at cross purposes. Rather than functional teams trying to steer the project, the team would draw on the expertise of its members as needed but set its own goals and agenda. It can better challenge old ways of thinking and be faster and more agile, leading to more innovative ideas and products.
- 2. Candidates should be able to demonstrate:

Communication	to share information and ideas inside and outside of the team
Initiative	to deliver innovation at a rapid pace
Critical thinking	to solve problems and make effective decisions
Negotiation	to balance priorities and build agreement
Organisation	to track resources and tasks effectively
Emotional intelligence	to contribute to and build trust and support within the team

- 3. A unifying and inspiring goal for the new team might be:
 - "To rapidly deliver transformational technologies and services that create new markets, customer value, brand strength, and profitability."
- 4. Each team member's personal network might also be an asset for the innovation team by:
 - being a source of external views that challenge their thinking
 - providing advice on building a strong team culture
 - creating 'warm openings' into new customer markets
 - · helping recruit new talent to grow the team.