ISB – Fostering Innovation

Week 6: Organising for Innovation.

Video 1: Organising for Innovation: Overview

Hello. Welcome to Module 6. In this module, I'm going to talk about how do you organise for innovation. I'm going to talk a little bit about the design of organisations for innovation or the productivity of innovation effort itself. So remember, we've spoken about the imperatives of the CDO to balance short-term and long-term objectives of the firm. The idea here that we have repeatedly seen is this idea of trying to pursue digital innovation without compromising the short-term profitability or the short-term objectives of the firm. And this has a tight link with achieving organisational objectives as well. To ensure that ICT is not only applied in the core areas of a business, the idea that it is also used to explore adjacencies are transformational projects, and this is how we've been speaking about trying to maximise long-term growth without compromising the short-term objectives of a firm as well.

To the extent that these companies can actually focus on their core as well as adjacencies, as well as transformational projects. This is a way to ensure that companies can achieve both their short-term as well as their long-term objectives. But more importantly, this idea of pursuing short-term versus long-term objectives should be done in such a way that firms can explore the synergies between the old and the new ideas as well. Once again, an idea that we've seen in the previous modules itself. And implicitly, all of this essentially means that there could be issues with integrating R&D with corporate strategy itself. In the sense that too much of autonomy in terms of exploring adjacencies and transformational projects would essentially mean that there might be very, very little synergies that can be explored with the old businesses of the firm, and this in other way has other problems as well. So, if these businesses are completely new and transformational, there's nothing wrong with that except that you are probably on the same even keel as maybe the other start-ups, which are the sources of creative destruction itself. This brings us to this idea of what might be the most optimal organisational design for innovation, what is organisational design itself in the first place, and I'm going to be talking about some of these issues as we go along.

Video 2: Organisational Design

So, organisational design fits into these broad areas which are essentially known as microstructures. And microstructures are essentially concerned with understanding how organisations work by dividing labour between different parts of the organisation and aggregating them itself. So, how organisation works by aggregating the actions of the members towards organisational goals? There

are different members in an organisation. There could be different managers. There could be different lower-level managers as well. Lower level as in, the lower levels of the hierarchy. How do you aggregate these different things that these people do towards a common goal, the common organisation goal? This could be the corporate strategy that we are actually talking about. And microstructures are also involved in understanding how to make organisations more productive by simply thinking about how you divide up these tasks between different members of the organisation.

And this idea of microstructures or altering the microstructures of organisation broadly fits into an area called organisational design. And microstructural approach narrows our focus by abstracting away from a variety and the complexity of organisations. So here, just as a practical matter, I'm using the word "organisations". I'm not using "firms". I'm not using the word "teams". I'm not using the word "divisions". But I'm using "organisations", simply because the idea of organisations can be applied to teams. It could be applied to divisions. It could be applied to firms. It could also be applied to other forms of organising businesses as well.

So, I'm going to use the word "organisations" very loosely to connote and abstract away from the variety and the complexity of organisations themselves. I'm just going to call this, using the word "organisations". And if you want to think about it, you can think about it either in terms of teams, either in terms of divisions, or either in terms of other kinds of structures that might exist within your respective firms. And this distills into a few fundamental and universal problems of how businesses or any function within the business itself should be organised for optimal performance or for, in our case, maximising innovation productivity. And this is one of the key aspects of managing itself. So, one of the key functions of managers is how do you divide up tasks and how do you aggregate them. If you look at managing from that perspective, organisational design, which involves dealing with microstructures or altering microstructures to improve productivity, should be a fundamental aspect of managing businesses. And this is one of the reasons why you should know a lot about it, given your aspirations of becoming a CXO or a CDO. So, let's talk more about organisational design. When we spoke about ambidexterity, we spoke a lot about structure. And we spoke about the idea that structure is an important lever for organisational design that influences incentives. So what I'm saying over here is, while we looked at ambidexterity from an incentive infrastructure perspective, even the idea of structure can be collapsed into this idea of organisational design. But there are other issues that we will essentially focus on, which are equally important for the notion of appropriate organisational design to improve innovation productivity. And I'm going to talk about some of those in this module. And how do we define an organisation? Given that we are pursuing this very broad definition of organisation, what is an organisation? And I'm going to define an organisation as any multi-agent system with a common goal. And like I said, the notion of organisation could apply to teams. It could apply to divisions. It could apply to firms. And all of these are examples of organisation. In our context, digital innovation could require teams, which are one form of thinking about organisations. And the key concepts are that organisations are multi-agent. There are many people in this organisation, just not an individual or so. So, we're not talking about individuals. We are talking about a unit which we are calling as organisation, which has many people, which is the reason why we are calling them as multi-agent. They comprise of several individuals. But the key aspect is, all of these individuals somehow have to work towards a common goal. And this could be our corporate strategy. This could be a particular aspect of your innovation strategy itself. Whatever it is, we are conceptualising organisations as being multi-agent. They comprise of many individuals who have to work together towards a common objective or a common goal. And that's what we're talking about. But if that needs to be done, talking a little bit more about organisation design, if multiple agents need to work towards a common goal, there are, in turn, two other imperatives. There are at least a couple of managerial issues that have to be sorted out for these kinds of structures to essentially work towards a common goal. One is this idea of the extent of specialisation, division of labour. How do you divide these different tasks? How do you break them down into sub-tasks and assign them to different agents within the organisation? And the second one is essentially the opposite of that. Once you have divided these tasks, given the objective of trying to achieve this common goal, how do you integrate them back? The idea of coordination. So, there are these two tasks: Specialisation and Coordination. And the notion of micro-design essentially implies that several organisational configurations might be possible.

And what we are trying to imply over here is that these design or these configurations essentially influence outcome because of moving these two levers that we spoke about, the extent of

specialisation and coordination. So, why would this be important for innovation? There are several articles. Here is one article from McKinsey that talks about why microstructures or organisational design, or thinking about micro structures, which is organisational design, might be very important for innovation. So this one, for example, says that there's no right way to organise R&D, but a set of core design principles can provide organisations with the flexibility in order to outpace their competitors. So, what this is essentially saying is that organisations need to think about microstructures. And one of the reasons why they need to think about microstructure is to have a flexible setup, so much so that organisations can actually adapt to different changes in the environment. Once again, this notion of adaptability and the importance of adaptability to outpace your competitors come up. And one of the ways to do that, this is what this line is saying, one of the ways to do that is by thinking about a design that provides flexibility to organisations. Here's another quote from the same article, which talks a little more about digitalisation itself. So, the traditional component-based approach to R&D is no longer sensible in an era when digital and electronic systems are thoroughly integrated with hardware, especially in this era of just not software. Maybe IOT, and so on and so forth. Still, many companies struggle to shift towards an approach that focuses more on the function the customer wants rather than components that make the desired functions work.

So, this once again takes on this view that it's important to be customer centric. But customer-centricity should not determine how organisations should be structured. In other words, organisation should be structured to deliver the function rather than organisation structures being determined by what just the customer might actually want. Once again, it talks about the importance of structure or microstructures for performing a function, especially the last line. Here is another quote: "Determining the right structure for an R&D organisation has never been easy. The division of responsibility is a balancing act between project-management organisation and the R&D line organisation." So, I'm just going to pause here. There are other things that are said in the same sentence, but I'm going to pause here. This specifically talks about the challenges of balancing two things, which is what I'm going to talk about as we move along. The idea of trying to balance the division of labour specialisation on one hand, along with the need of coordinating these different sub-tasks towards a common goal. So, at least this article says that, or the sentence says that, there is a challenge, in terms of being able to balance both sides of the coin that we spoke about just about a minute back. And here, are a set of winning design principles. In the ideal R&D organisations, responsibilities are clearly established. And the interfaces between them among teams are also transparent. So, this talks about, "Okay, look. There is something that managers can do to make two things work."

The idea of coordination as well as the division of labour, both sort of work simultaneously. And that's the aspect that I'm essentially going to focus about. I'm going to focus on two things. One is, what is the trade-off between division of labour and coordination? And how can managers solve this trade-off? If managers don't solve this trade-off, you're not going to achieve organisational objectives. You're not going to be able to achieve innovation productivity. You're not going to produce ideas. You're probably not going to direct some of these R&D efforts towards corporate strategy. Both of these are important. How does a manager essentially achieve it? And if you believe this article, this may not be as easy as it sounds. There are, however, a few principles that we can use, so that managers can balance the benefits of specialisation, which I will talk about in a little bit, with the ease of coordination as well, which is something that I'll also talk about in a few minutes. By the way, organisational design or organisation design is a billion dollar practice. Here is another example from Bain. So, this picture is from Bain. And if you go to any of these big consulting firms, organisational design is a key, a billion dollar practice, precisely because of the trade-off that we spoke about. With innovation, the key task is dividing up R&D effort between different agents, between scientists, engineers, whoever is indulging in the innovation activity, and simply also to coordinate them according to your strategic needs to maximise innovation performance.

Video 3: Division of Labour, Coordination Cost and Trade-Offs

Let me take you through a few of the nuts and bolts of each one of these ideas of specialisation and coordination. So,

and I'm also going to touch upon the trade-off between specialisation and coordination itself. So, let me first talk about the division of labour. What do you mean by division of labour? What do we mean by specialisation? And in this module, I'm going to be using the terms, division of labour and specialisation, interchangeably. And what I mean by division of labour is this idea of partitioning a complex process or a complex task into several different sub-tasks. This is this idea of chopping it up into bits, chopping it up into smaller sub-tasks. This is what we are talking about. A given number of workers can produce far more output using division of labour compared to the same number of workers who are all generalists. So now, I'm beginning to talk about the benefit of division of labour. Why? Because if a person keeps performing a task repeatedly, that person acquires dexterity from learning and that enables the person to produce a larger number of output relative to when the person was a generalist. So, that's why we're talking about, right? What would be a very good example? Think about how the honeybees work. So, research suggests that honeybees are incredibly specialised. And why are they specialised? Simply because they have a production function, which is the idea of producing honey. And they are able to maximise the production of honey simply because they are specialised. So, division of labour increases dexterity, which is the reason why specialisation increases in higher productivity. In our context, if a person specialises in a particular domain, in the R&D area or digital innovation, that person is going to outperform relative to trying to engage in multiple domains in the digital innovation area. So, that's what we are talking about. So here, we have spoken, not only defined what we mean by division of labour, but we've also spoken about the benefits that might emanate from the division of labour. So like I said, we will use the idea of gains to specialisation as the benefit that arises from the division of labour. So, whenever I say gains to specialisation, I'm talking about the benefit of division of labour. The other principle that I really want to talk about, other than division of labour, is this idea of coordination costs. So, why is it difficult to coordinate? It is because of the presence of coordination costs. There are, believe it or not, costs of coordinating activities. Sometimes it involves manager's time. Sometimes it might require purchase of things like software. It might even include other kinds of monetary investments. And this is what we are calling as transaction costs. Every coordination activity involves transaction costs, and this is the cost of coordinating activities between different agents. In an innovation setting, this is about the costs associated with combining activities of different scientists or R&D personnel, each of whom does a specific small tasks. So, let's think about a software project. A large software project, you divided up into different modules. People are implementing different parts of the module; people are coding up different parts of the module. But ultimately, if this software needs to become a product or something that can actually be deployed within your organisation, these different modules will have to be integrated. And we would have heard about the notion of a project manager. Project managers are essentially coordination specialists. So, the cost that the firm or the organisation is essentially incurring, in this case, the transaction cost, is the cost of the project manager. It could involve salaries. It could involve other kinds of non-monetary costs as well. The trade-off, of course, is that how do you balance division of labour and coordination costs. And if you pause for a minute and think about why is there a trade-off? This would point you in this direction that if you chop up task, a big task into very, very tiny bits, what you're implicitly doing is you're also increasing the cost of coordination. Sure, there are gains to specialisation, but too much of division of labour increases coordination costs. The question is, how do I balance this trade-off or how do I continue to get gains from specialisation while still keeping the coordination costs under check. And this is where the trade-off typically comes from, and tasks similarity between organisations decreases coordination costs but also decreases the gains to specialisation. Let's say that you have an organisation in which there are these teams, let's say, the sub-units or agents within the sub-units that are generalists. What would happen? This would obviously minimise coordination costs simply because each one of

them might have knowledge of what the other agent is essentially doing. But there may not also be gains to specialisation simply because each one of these agents are just being a generalist. So, you can see how these trade-offs move in the opposite direction, these two elements move in the opposite directions, which is the reason why I've used the word, trade-off. So, if you have perfect division of labour, so much so that there is essentially no overlap between functions of any two agents across an organisation, then there might be a very high level or perfect division of labour. In other words, no overlap. But on the contrary, if you have a generalised setup, there is a high level of overlap and perhaps also internal competition because these agents may also compare their work and compete with each other. But this also means that there might be this ease of coordination when there is generalisation, but there is also no gains from specialisation. On the contrary, if people are highly specialised, there are tremendous gains from specialisation because of perfect division of labour, but coordination is also going to be a nightmare. So, under this scenario, the manager's problem is essentially to figure out when he or she is trying to solve the digital innovation problem, solve the digital induced creative destruction problem, what is the optimal division of labour?

In order to understand this question, we need to understand the pros and cons of both of these constructs themselves. Pros and cons of division of labour. Pros and cons of some of the after-effects of overlap. Having people do these multiple tasks, which is what I'm calling as high overlap and internal competition. If there is high overlap, it's natural to have some element of internal competition. Two agents may be competing with each other either for resources or for their outcomes to be used within the organisation. So, we need to understand the pros and cons not only of division of labour but we also need to understand the pros and cons of having high overlap and internal competition as well. So, to summarise, the manager's objective function is optimal design, and this design is important for ensuring both gains from specialisation and low coordination costs. In addition, it's also in the interest of the manager to minimise the ill effects of internal competition. When there is too much division of labour, sure there's high levels of dexterity and gains from specialisation as well, but there is too little internal competition and very high levels of coordination costs. So, we have, it's very difficult for project managers to coordinate because there are lots of these small, tiny projects that needs to be integrated across. For example, that's a problem. And if people are perfectly specialised, people are also not competing with each other. Sometimes competition brings out the best-of-breed projects, and that's also less likely to happen.

So, too much of division of labour, on one side, has these gains from specialisation, but on the other side, it has too little internal competition and very high levels of coordination costs. Too little division of labour, on the other hand, means that there is minimal learning because people are not doing the same task over and over again. There is less to gain from that kind of dexterity. But there are also lower coordination costs as well and high levels of internal competition. People are almost fighting with each other because there is a high level of overlap between tasks of different agents. So, here is some of the gains of division of labour. Greater dexterity. Some of the benefits of division of labour, just to summarise, is greater dexterity in tackling problems, learning by doing which helps organisations to obtain greater depth of expertise. So, you are getting deeper and deeper into a given technological domain. But on the contrary, it also narrows down the scope of activities, narrows ability to absorb other types of information that might be available in other divisions of the firm, other organisations of the firm, and this might increase coordination costs. So, the important, it becomes, the role of the manager, the coordinator, becomes incredibly important. It might also lend itself to hyper-specialisation, and this also increases coordination costs. On the contrary, if you say that, "Okay, look, I'm just not going to specialise because I'm worried about coordination costs", the other way to think about dividing up task is to make everyone generalist; everybody does everything within the organisation. And this creates internal competition because everybody is doing everything, it's inevitable for two different agents to come up with very, very similar innovations. And at which point, as a manager, you'll have to decide which one to use. And that might create a source of internal competition and to the extent that the resources for future projects also depends on who wins the

race in the previous round. This competition for resources might also intensify the level of internal competition. So, generalisation increases or creates internal competition, which enables units, teams, individuals to be put to... This might incentivise them to put in more effort as well. So,

that might be actually be a benefit as well. So, you could look at it from two perspectives, it is either a problem to be solved or it could also be beneficial as well. And here, I've taken the view that some amount of internal competition might actually be very good simply because it enables the manager or the organisation to choose the best-of-the-breed solution. The other advantage of generalisation is the ability to absorb knowledge, i.e. there are things going on in different parts of the organisation, and you know what, I'm just going to be able to understand what the other agent is essentially doing within the organisation. And that just means that the ability to or the importance of coordination may not be that much. Some of the problems of generalisation is that it creates incentives simply because two people are competing with each other, and this winner take all attitude of the manager, sometimes might become very, very caustic, so much so that it creates other kinds of political issues within the organisation. An internal competition also increases wastage. So, it's inevitable. If two people are producing a solution to the same problem, it's inevitable for one of them to be wasted. So, viewed from that perspective, internal competition also increases the amount of redundancy or wastage as well. And these trade-offs essentially make the determination of the optimal division of labour. In this trade-off, what is the optimal division of labour? A little bit tricky to determine for a manager. So, here is an example. So take, for example, a feature, such as lane assistance for vehicles. Developing further advances in this function depends on a high level of coordination among teams, developing steering systems, brake systems and electrical systems as well. But too often, that coordination occurs very late in the cycle, and sometimes, it can be time-consuming. R&D function talks about the importance of specialisation as well as coordination, and it laments about the fact that sometimes, this coordination essentially happens so late that it makes the task of coordinating these different functions become very, very difficult for a manager. As far as we are concerned, this simply highlights the importance of division of labour as well as coordination. And in addition, it also brings into focus the importance of the manager in enabling both coordination and division of labour. So, now that we have understood this trade-off, how do we resolve this trade-off?

Video 4: How to Resolve Trade-Offs?

So, now that we understand the trade-off, how do we resolve this trade-off as managers?

So, let's first think about what is it that we want. What happens when you have only specialisation? And these outcomes, by each one of these constructs, would essentially tell us what is it that we might actually want. For example, take a scenario in which there is only specialisation but maybe no overlap at all. In that scenario, what would happen is that the specialisation of the organisation would essentially create these better outcomes, but it would also increase the transaction costs of coordination.

Let's talk about the effects of these constructs one by one. So, let's first talk about the effect of specialisation. We argued that specialisation should improve outcomes of organisations simply because of the dexterity that emerges from learning. If an organisation essentially had only specialisation, we implied that it should create more value, more valuable innovations simply because of this learning and dexterity, but it should also create lower amount of wastage. Why? Simply because of greater dexterity, they might essentially be producing something of incredible amount of value. On the contrary, we talked about these two dual effects of overlap itself. On one hand, overlap essentially means that its coarse division of labour between units. It might actually be able to create better impact simply because there are different people who are essentially working on

the problem. This is the effect of competition. Competition gives you better outcomes simply because people are competing or agents are essentially competing. But this might also increase wastage because of higher competition. Although we looked at specialisation in isolation and we spoke about it in terms of improving organisational outcomes at the level of the firm' at the level of a different unit of aggregation, which might be the firm that might still create suboptimal outcomes simply because specialisation might increase the costs of coordination, which is really the reason why the right or the most optimal design would essentially be something that is a combination of specialisation and overlap. Specialisation and overlap increases the impact by more. It is even higher than just pure specialisation, but it also reduces the cost of wastage because of the ease of coordination. So, this is the right organisational configuration. And for managers who intend to maximise innovation productivity, the appropriate organisational design might be one that involves a little bit of specialisation and overlap.

Here is a summary of what I essentially spoke about. If you have highly specialised organisations with perfect division of labour and no overlap, the coordination costs are immense. On the contrary, if you say that look transaction, I want to minimise the transaction costs and I want to create a generalised micro structure, that would essentially mean imperfect division of labour, but then there is high overlap and internal competition. We know that internal competition, for example, increases wastage as well. That could be best of breed outcomes but there is also increasing wastage. On the other hand, there's high levels of specialisation. People are producing better output simply because of this increased learning and dexterity. But on the other hand, this may not be high enough, relative to when people are able to combine their outputs with each other and when they are competing with each other. And hence, the optimal division of labour or the structure that managers should aspire to create is something which I'm calling as the optimal division of labour is one that has reasonable amount of overlap with reasonable amount of specialisation.

So, ideal innovation organisations or experimental organisations have optimal division of labour, one which has reasonable amount of overlap and one that is also reasonably specialised. Here's an example of Boeing 787 and all of us who have been following the Boeing 787 would not exactly deem that project to be a big blockbuster success, partly because of the outcomes that we hear in the market. Also, partly because of the high levels of cost overruns that that project essentially took. It took a lot more years than they had planned, and it costed them several billions of dollars more than they had initially planned as well. So, why did this happen? Here's an article from Fortune that did a post mortem on why that might have essentially happened. And that article actually talks about the way by which the 787 project was actually executed. And one of the things that was very, very different in how the 787 project was actually executed is the fact that there were different vendors out to whom the several parts of the project were essentially outsourced. And this article talks about the fact that Boeing 787 project was incredibly more specialised or there was high levels of division of labour relative to what might have actually been optimal. More interestingly, this article also talks about the absence of coordination. The minute you have such division of labour, it was important to have reasonable levels of coordination. And this article essentially talks about the failure of the coordination effort, which might have essentially resulted in suboptimal outcomes for Boeing 787 project. Once again, it emphasises the fact that the optimal R&D organisation should be something that has reasonable amount of specialisation along with reasonable amount of overlaps as well.

Video 5: How Do Firms Achieve a Reasonable Amount of Specialisation?

How do firms achieve reasonable amounts of specialization along with the ability to coordinate it or overlap? Here is a non-ICT example that of a firm which is one of the market leaders in the pharmaceutical industry, Novartis. Novartis spends roughly between 15 and 20% of their revenues in R&D. And their entire business model, if you think about the pharmaceutical industry, the entire business model of the pharmaceutical industry depends on their ability to generate blockbusters. Blockbuster is any product with a revenue of about a billion US Dollars on an annual basis. The ability to generate blockbusters is the source of competitive advantage for pharmaceutical firms such as Novartis. So, you can't imagine an organization or an industry in which R&D is the source of competitive advantage. How does Novartis essentially generate these blockbusters? Because Novartis is one of the market leaders, they are successful in creating these blockbusters. How did they achieve this? There is one for example in Cambridge. There's another one in Basel, Switzerland. There's one in Horsham, UK. There is one in East Hanover in USA, and one in Shanghai, in China. What I want you to notice is that there is division of labor. For example, disease areas that are housed in one organisation but not the other. If you think about infectious diseases, you find that in Cambridge but not maybe elsewhere in the world. Similarly if you are thinking about autoimmune diseases, it's there in Basel, Switzerland but not anywhere else in the world. Oncology for example, seems like it exists in Shanghai but maybe not in every other organisation within Novartis. For example, if you're thinking about Basel, Switzerland, gastrointestinal diseases overlaps between Basel, Switzerland and Horsham, UK. So, here's an organisation which has reasonable amounts of division of labor and reasonable amounts of overlap. This probably is one of the reasons why Novartis is able to produce blockbusters, maybe a little bit better than some of their competitors in the same industry. And this is an example of how to resolve the trade-off that we spoke about. Oncology for example, exists in almost all the divisions except maybe Horsham, UK. And once again, something that is symptomatic of reasonable amount of overlaps as well as specialisation. For example, Horsham, UK does not do oncology at all. The second thing that I really wanted to talk about is how do you resolve? So, one of the key aspects of management, when there is a reasonable amount of overlap, is to resolve this overlap. How do managers essentially resolve these overlaps? The idea is to consolidate some of these projects. What do I mean by consolidation? It is about the idea of choosing the best of breed and at the same time pacifying the losing unit, division within the firm. And here are different scenarios under which consolidation can actually be done. We are talking about for example, situations under which technological uncertainty is high. Market uncertainty is very high. There are lots of duplicates and so on and so forth. One of the key aspects of managing when there are overlaps is thinking about the situation, and hence thinking about whether to choose the best of breed or to have both of them co-exist. Under what conditions should these essentially co-exist with each other? And under what conditions only one of them should be chosen? I'm going to leave you with this prescription for getting you to think about how do you manage overlaps and how do these different scenarios,

so for example, technological uncertainty, market uncertainty influence, whether you should allow these projects to co-exist when there are overlaps or whether they should be consolidated. In which case, you're choosing one over the other.

Video 6: Organisational Culture

This other aspect that I wanted to talk about, which is one of the key roles of a top manager, like that of a CDO, is about culture. And the point that I would emphasise on to just to give you a sense of where I'm going with this is this idea that common culture decreases coordination costs. And you might wonder why? But

before I start, let me first start by defining what I mean by culture. It means different things to different people. But as far as I'm concerned, I'm going to give you a very, very specific definition. And for me, culture means collective sense making. When there is common culture, managers react very, very similarly to a certain kind of stimuli. When there is common culture that also means because managers are reacting very similar to stimuli, a common culture decreases coordination costs because of coherence with the common goal. Everybody is reacting very similarly. There is very little discard and that might itself minimise the coordination costs. And that's the logic that I'm actually going after. So, to the extent, culture means collective sense making; a common culture essentially decreases coordination costs. And organisations with stronger common culture create more specialised teams.

So, it gives you the bandwidth to create more specialised teams, because think about it, the jump in coordination costs because of specialisation is not very high when there is common culture, relative to their not higher rates of specialisation will not result in large increases in coordination costs, which is another reason as to why this commonness in culture could be incredibly important. As an organisation, you could benefit more from specialisation. You have this opportunity to increase the gains from specialisation provided you have a stronger common culture. But then, what is strong common culture? A strong common culture essentially implies the commonality in two dimensions, similarity and focus. Similarity in organisational attributes that are important to employees. So, this is a broad agreement on what organisational attributes essentially matter to employees and managers. It also means agreement on whether they prefer many attributes to fewer attributes for the organisation. The similarity essentially means that what matters to employees and manager? Is there consensus in terms of which kinds of organisational attributes matter to employees? And focus essentially means whether a lot of attributes matter or just a few attributes matter. And whether there is commonality in that dimension as well? A broad agreement in both of these parameters imply that people understand each other very, very well and there is a shared vision.

This is what we are calling as common culture. There is a shared vision of what matters to the organisation, not individually, but as a collective. And this is what decreases coordination costs. And this is the decrease in coordination costs that gives more avenues for organisations to increase or benefit more from the gains to specialisation itself. But then, how do managers essentially create strong cultures? I'm essentially going to talk about two mechanisms, two of perhaps the most important mechanisms. One idea is to remove asymmetric communication. What do I mean by asymmetric communication? You want to permit more of peer-to-peer interaction and remove asymmetry in the relationship between two people who are talking to each other.

So, for example, if people, if employees are talking to their managers, that's an example of asymmetric communication. And one way is to remove the asymmetric communication and encourage a lot more peer-to-peer interaction. In other words, remove unnecessary hierarchies. If you remove unnecessary hierarchies, there is greater amount of socialisation between peers. And that essentially increases collaboration and reduces the cost of coordination. And that, in some sense, creates a common culture as people start to talk with each other. People ideas become very similar. And that creates these people to somewhat coalesce around a particular kind of culture. And that, in turn, decreases the coordination costs. The second way to do this is, of course, to allow employees to choose their projects as opposed to being assigned certain kinds of projects. And this is incredibly important. We also alluded to this in the context of corporate entrepreneurship. We spoke about the success of organisations such as that of Google or, for example, 3M, because these projects essentially emanate from the bottom. And the reason why these firms are successful is also because there is this choice of these employees to decide on which kinds of projects to pursue

implicitly. And this kind of sorting, allowing employees to choose rather than being assigned projects, essentially creates this idea of greater amount of common culture as well. Because people who are working on the same set of tasks or same projects essentially have, they tend to share the same objective, because it's essentially the merits of that particular project or the idea that attracts them to the project. So, sorting is another way to create strong common cultures.

So, what did we speak about in this module? We spoke about the idea or the importance of organisational design to achieve a set of innovation outcomes. In particular, we broke that down to this idea of why are microstructures important. What do managers do? Managers essentially manage these microstructures. And these micro structures are typically tricky to manage simply because of this trade-off between specialisation on one hand, and overlap and internal competition/coordination costs on the other. Specialisation requires some amount of overlap for coordination and the need for minimising wastage. But then, what is an ideal organisation design? To improve organisational innovation productivity is something that has reasonable amounts of gains to specialisation, as well as something that has reasonable amount of overlap. And this is the kind of R&D organisation that could essentially be the most productive in terms of innovation output. And the logic is as follows: Too much generalisation might create hyper competition and high amounts of wastage. But on the contrary, high amounts of specialisation might also increase the coordination cost. The right or the optimal kind of R&D structure essentially is a combination that allows for both specialisation as well as coordination. We spoke about a couple of ways to create these kinds of organisations. So, we spoke about, for example, the importance of common culture and the importance of allowing employees to choose projects rather than being assigned projects. These are two typical ways to create these common cultures and maybe to make organisations a little more specialised and in terms of increasing their innovation outcomes.