



EP 2: FROM RESOURCE PRODUCERS TO RESOURCE STEWARDS: TRANSFORMING TALENT IN MINING

AUDIO TRANSCRIPT

Introduction

0:01

This is Inside the Heart of Change brought to you by Accenture. Let there be change.

Seetal

0:09

Good to have you join us on Inside the Heart of Change. I'm your host Seetal. On this episode of Inside the Heart of Change, transforming future talent in mining and metals, we're going to explore why the traditional recruitment pathways and strategies are no longer relevant, and how best we can bring technology, innovation and sustainability together to build the right environment for the future workforce. Now our expert panel today comprises three very accomplished people who between them possess decades of experience and a wealth of information regarding metals and mining in India. We have with us Mithilesh Kumar, lead associate director focusing on chemicals, mining metals, pulp and paper building materials as part of Accenture's advanced technology centres in India. We also have Chandni Vazirani, southeast Asia market unit lead for growth markets. And we have with us Professor Rajiv Shekhar, who is director IIT ISM Dhanbad. Now, we're talking

about mining and metals on this podcast. This is important because we don't always realize how crucial this industry is to growth. By that I mean, the growth of industry and the overall growth of our, well, society. Mithilesh explains why mining and metals, while seemingly unseen, are central to the larger India growth story.

Mithilesh Kumar

1:33

It's very intriguing industry for all of us. Because it's a very basic extractive industry. If you think of mining and metal, this is a very, very core to human survival. Everything around you in your lives is having some element of the mining, right, the kind of mobile phones we are using the laptops to which we are communicating has some element of methods. If the world has to really go towards the new ways of working the electrical vehicles, if they all have to really learn on the road, you will require lots and lots of materials which go into making the batteries. If you require your mobile phones to really work, you will require the elements which go into making mobile phones and the ornaments and the jewellery which many of us are fond of. The gold, it also comes from mining, which a lot of us are very proud part of it. And interestingly, as



a matter of fact, it's an industry which is the backbone and a very primary indicator of everything around us in terms of economic progress, and also the societal progress.

Seetal
2:32

Now that helps us understand the importance of mining and metals better. If we were to look at the changes that an industry wide transformation is creating on the talent side of things, until recently, most of those conversations about the future of mining and metals, focused on advances in technology. But there are other factors also at play now. Chandni Vazirani explains these various factors that are driving change from a talent supply perspective.

Chandni Vazirani
2:59

Most of the mining companies are now putting tremendous focus on core technologies, like the automation, pervasive networks, the ultra-high band communication, because all of these are becoming so very important for the miners or the operators who are actually working in these mining giants. The ability to rethink your maintenance strategy is so very important. It's important, you know, to make these technologies more inclusive and human, which means that we you know, when we talk of a field inspector or an OEM operator, who's working on you know, multiple equipment, the design and user interface should be so intuitive for these, right, it is key for them because they are working on the ground. And you know, so simplicity here is the key. Another very important aspect is that mining still relies on knowledge, which is very, very institutional, right, and very local in nature. So, it's important for us to digitize these experiences to make that workforce much more inclusive and progressive. So, the work of the global talent innovation initiative is to explore possibilities for potential future roles, how you know, we can start defining these extreme cases, you know, which may have an overlap with these new scenarios for the future. So, the future for most of the mining and metal companies will likely be

shaped by some or the other combination, one on technology, two on environmental, social and governance and of course, the not to forget the geopolitical drivers, right. So, these are going to be extremely important as we navigate through.

Seetal
4:56

Mithilesh recommends a holistic point of view. One there to address current perspectives, clears myths around the talent in mining and metals, and actions that can reshape perceptions on the ground. A more holistic and proactive approach, he insists, is the way to drive the future of mining.

Mithilesh
5:13

If the world has to really survive with the aspirations I already talked about, it has to do the same mining it has done in the last 200 years. Which means we need to think about mining in a very holistic perspective. And what it means for us, our mining companies have to really worry about their vision towards triple zero, which means are we doing enough about not only keeping people safe, while at the same time, are we doing enough to ensure that if somebody is running into the site, he is going back without doing any damage to it to their well-being? So how do we create that sense of pride among the people, not only the people who are working, but also the people who are their families and the communities? That's one part of it. The second part of it relates to the repetition part of it, if you will look at the data, almost five to 7% of total carbon emission globally, is contributed in one way or another by mining and metals companies, which are primarily extractive in nature, they need to give a very auditable proof about the kind of work they're doing the kinds of processes they apply the methods of mining they have, so that the communities, the investors, people who give them financing the banks, and the governments will give them a lot of support, to acquire land to



go for new exploration are comfortable with the record and have the confidence that this mining is not done only for extraction of minerals, but it is a job creation thing. How do we also ensure that in the whole process, we make our workforce and the people inclusive? By inclusive? I mean, how is it that we really induce more digitally native talent is it like and pretty much in mining, again, the average workforce that of course, varies from geography to geography, but in so the mature markets where dominance of mining exist, if you talk about Australia, if you talk about Africa, some of the markets in India, we pretty much see the speed at which the new people are joining the workforce is not the speed at which the knowledge workers are exiting. So, it's all about how we really smartly retain that knowledge and people who are coming in how we create that sense of excitement.

Rajiv Shekhar
7:32

In India, the face of mining is all set for a big change. Earlier, the mining in India was captured by old images of from films like kala pathar, where you had a person with a cap lamp and basket on the head going with a pig. And later on, they had automated the whole conveying system, that has changed significantly. Technology has come in a very big way. In mining, right from when you're saying exploration to a mine plan. When you start mining, you have to make a mine plan which tells you based on the geology, it tells you where to mine etc. And then based on that operations, logistics etc decide. Now, there are very powerful software that helps you do mine planning, help you to logistics, etc. The other thing is your big mining machinery also coming in software and hardware that delight sensors, IOT, machine learning, etc, is an important part of all branches of engineering in mining. So, I have a feeling that with the advent of technology, what will happen is many of these students even if they don't join a mining company, they will work in developing technologies for mining, so

they would be indirectly associated with the mining sector.

Seetal
9:06

Emerging technologies, sustainability and geopolitical uncertainty are shaping future operating models for a traditional sector like mining and metals. So, what are the most sought-after skill sets that would be needed to tackle new challenges? Chandni and Mithlesh offer interesting insights from an industry point of view and professor Rajiv Shekhar explains the changes that are happening at the academic level in terms of the ideas as well as the processes when it comes to this all-important aspect.

Chandni
9:37

Typically, our research outlines nine profiles showcasing the breadth of the future skill sets. The industries we would typically need as we you know, succeed into the coming years and many of these common skills are new capability priorities, you know, for these industries. As I said, it's very mining focused understanding the business of the miners, how their day to day operations are run, you know, which brings in my first point of having the business awareness of you know, the dynamics impacting the business decisions, and the focus, and simple things like the market intelligence, you know, will be extremely important. The second aspect that I want to bring in is the understanding society or community interdependencies, you know, at the site level, which is, which is bringing into another concept of entrepreneurship. So, that's the second aspect that we should keep in mind. The third that I would talk about is having composable architecture with, you know, data platform and solutions. And none of these can work without each other, right. So, we will be having applications technologies, but data is equally important to be making sure, you know, we have that end-to-end visibility into, you know,



how the business is actually making their work on the ground happen. The fourth aspect that I want to call out is on artificial intelligence, the internet of things, which is nothing but IOT cloud, machine learning, which is going to be so very important, you know, as we move into the new era of advanced technologies, in areas like mining, and we have lot many already being deployed, to be able to have in the minds of the future, and so on. Right. The other aspect is also the cultural and the emotional intelligence, because we have to bear in mind that, you know, these people who are running the business have been in these roles for very, very long years. And you know, almost having spent a lifetime carrying out their jobs. So, we have to be a little more cognizant of, you know, these these aspects which come in more from a human aspect, right. And, of course, the creativity, the innovation, and keeping the users absolutely at the prime, having that kind of a mindset to be able to develop solutions is going to be absolutely important.

Mithilesh
12:15

There are technologies around all sides. In fact, the investment on technology in field of mining has really tilted more from the core of mining to exploration geosciences, because pretty much the movement of earth surveys and beneath it is very subtle. So, my response to your question Seetal is, it's very important for us to have top notch ability on advanced analytics, internet of things, and pretty much your your data. And for this to really work, you need a great thought-out way of operating the data, deriving insights on a cloud platform. The second element of this is about having the cultural intelligence, which is also about understanding the context in which you operate. If you talk about some of the old-ish geographies and regions like Africa, wherein it's still unionized, the old ways of working resistance to change, right. So how do we deal with that kind of issue? Because pretty much the moment we will bring in new technologies, as I said, like automation, robotics, it also comes with a notion of snatching the jobs away from people,

which is not correct. So how do you have the administrative acumen to break these kinds of misconceptions and create that level of emotional intelligence that look, we are taking people away from harm's way and repurposing them in some of the supervisory roles, where in their job is to, you know, make sense of the reports, job is to make real time decision making, right? And if you really combine some of these elements, these are around how do we ensure that sense of entrepreneurship, the ownership, the data driven way of looking into it? And also, how do you ensure that the decision making the visibility is shared across organization, right from people who are sitting in your remote operations centre to the people who are there inside the caves and people who are there at the pit.

Rajiv
14:15

Now, domain knowledge has to be an important part of it. Because if you don't know the domain knowledge, you can't really work on the software as effectively as you want. Then you would want knowledge in important new technologies, AI, iot, machine learning sensors, and just a general idea of how to adopt them. But this part is not a major concern, because students have already realized it, that a second degree would also help. So, for example, in IIT's we have a double major, where you can get a second Btech degree after one extra year, or you can get an MTech degree in your same department or others. So, consider a mining's student who gets a second degree in computer science, you know mining plus electronics, that should be an awesome combination. The other important aspect is what we are also trying to develop, see engineering is very theoretical in the countries he I have never worked outside. So, I always say I talk about engineering, I never do engineering. So, what we are trying to do is, we are trying to develop a product development mindset among the students, when they are studying, let's say newton's first law, when they are studying maxwell's equation, their mind should think, you know, what are the



practical applications? And can I make something new out of it. So, this aspect, and we are also trying to develop it through projects. So, I think the industry has to start differentiating, what sort of people should be used in shopfloors, in shifts, what type of tools can be used for higher value jobs, and you define those higher value jobs properly. So, these three aspects, knowledge, multiple skills, in terms of knowledge, product development skills, and job description that fits the qualifications of the candidate is very important.

Seetal
16:16

Emerging technologies, perhaps more than anything else are likely to shape the change in the next few decades in mining and metals. But which areas will they impact? What are the implications? Chandni believes we are now in the age of the fourth industrial revolution.

Chandni
16:32

Let me start off with the fourth industrial revolution, right. So, in the coming decades, technology will both significantly improve productivity and make realities of remote operations. And we have, you know, umpteen examples of how this is already being done. So, I have seen a preview of how sitting in a swanky office in Perth in Australia, how the remote operations of a mine were managed from, from that remote location, right, and the mines are like 1000s of miles away. But we're actually controlling those operations from within that building, and being able to get the produce, right. So that's how important technology is going to play a role as we move forward. The second aspect that I want to bring about as we have more and more operational technology, by operational technology, I mean, the technology, which is actually used in the applications, which are used by the miners themselves, is very tightly integrated with IT. And hence, cybersecurity becomes an extreme threat. Because then these applications get exposed, or

an increasingly sophisticated actors can gain access to these applications through the company's IT network, they can infect critical equipment, which will result in real time damage in the sense that the operations could stop, there would be a big issue in terms of how the produce actually gets stopped, the entire operations could go to a standstill. So that is the second aspect that we need to be cognizant of. Technology will drive the innovation, we have to start thinking of newer ways and means and making sure that we are including the environmental, social and governance areas, finding alternative ways to you know, using cyanide to leach gold from an ore for example, and identifying new ways to extract rare earth metals from...From recycled material, right. So how do we get technology to help the business with newer ways of running their processes and their businesses?

Seetal
18:47

Mithilesh explains that mining as an industry needs to reinvent, even reimagine itself. Professor Shekhar believes that emerging technology will transform the industry in fundamental ways, right from exploration to vehicle maintenance.

Mithilesh
19:02

We'll have to look at it from the lens of how is it that we want technology to really help? Is the intended usage of technology only at about improving productivity of people? Or is it also about creating opportunities for us to grow our businesses? Right, as I said earlier, in response to one of your first questions, the world really requires a lot of mining. And let me tell you the cost of exploring has become enormously high. So it's a double whammy can kind of situation right? This is an era wherein mining has to reinvent yourself, itself, right? So, it's about how is it that we think of emerging technologies, which have the ability to recreate jobs, which has an ability to redefine jobs and also which



has an ability to put mining in a position of job creator? And as you rightly open saying, it's all about not being a resource producer but how is it that we are thinking is stewardship along the whole value chain? Right? Right. And the moment you think stewardship, it also brings in an element of mining being a very, very process intensive, asset intensive industry, you are also talking about modernization of your very technology landscape, which means your operational technologies and mining for that matter. Mining companies work very heavily with a lot of earthmoving equipments, lot of oems, the vendors who supply them big, massive, giant, like machines, which are required to do mining. So, it's about how is it that you create that layer of integration with your operational technologies, combining your enterprise technologies, and create that sense of cohesiveness because you have to really act on data. And while doing so, you're also inherently creating a risk around cybersecurity, which was not in this last till five to 10 years back because asset side technology was pretty much a guarded affair. So how do you really balance the need to democratize the use of data across your mining and metals operations? And also respond to these threat actors is the key. How do we use these technologies for mining companies to drive the change? Right, it's about being more data driven, it's about really understanding for every day of production, every shift of production, what is the carbon which I have emitted so that you can report it back to your policymakers, the governments, the societies, the mind directors, and in fact your own employees? Right? So, it's important that we use emerging technologies like blockchain, it-ot convergence, robotics, AI to our advantage in mining.

Rajiv
21:39

And what you need is you need good exploration data. The whole idea is with limited drilling, can we actually get a detailed and accurate description of the subsurface and this is where I believe machine learning artificial intelligence

would play a big role. In fact, that is what we are also focusing on here with the advent of these technologies, the location would be more exactly pinpointed, and the estimate of the reserves should also be more accurately pinpointed. Now, the problem is it's you make a mine plan, it will tell you how you should you proceed. If your exploration is not proper, you start mining in a certain way after a while where you expect a pole seam you... You get a non-pole seam. So that changes things. And this is where these mine planning software's they come in a big way. The other important aspect in mining is that the mining machinery used is extremely expensive. And you want to keep them operated, keep its availability and utilization to the maximum some of them are several 10s of crores. So that is where cyber physical systems would come in. So if you have an expensive let's say dumper, which takes it 10,000 kilometres or one year, whichever result, you can add your sensors sensing important characteristics of the engine, and other parts through IOT, they send data to the cloud and in the cloud, we have machine learning algorithms, which process the data and tell you okay, the probability of this important part failing within this specified time is this meant person, then you can make a decision and in many of these cases, the machinery is important. Essentially, exploration and mining would change completely. With technology it would help in making mining more efficient and increasing productivity at lower cost. And also, it will make it safer.

Speaker 1/ production elements
23:45

Vision, innovation, drive and progress. Find out what goes on Inside the Heart of Change brought to you by Accenture.

Seetal
23:56

What is the role of a high-tech leader? What are the skill sets that the employer should focus on



developing among employees to fill the gap? Should mining companies redefine such a role entirely building from the ground up? Chandni helps us understand what this might look like.

Chandni
24:15

So, Yuri is an analytic and innovative individual with a background in statistics and a desire to build upon you know and execute creative ideas. Her key activities really involve communication, collaboration and research. Now with the mining and the metals organizations continuing to develop digital technologies, I have analysis suggests this role continues to be in a relatively high demand compared to supply. Given the difference that we have between the supply and demand, the employers should consider building this role from scratch, right? So alternatively, employees could look for skills or similarities between the roles and prospective employees, right if they currently lack a data science qualification, so, as I said before the workers and even so the contractors may not be digitally native and fluent in adopting these digital tools. So, we must ensure, or the employers must focus on smooth, digital onboarding, virtual training experience and, and of course, even for that, you know, we can bring in metaverse, which can help us resolve these kinds of issues, you know, of having training sessions for these skill sets, or these employees. And the, another aspect to increase the exchange of information and skills is really by doing reverse mentoring, right, where we have a new joiner fresh from the campus, and, you know, can teach their line supervisors, you know, because this millennial kind of workforce comes in with I would say, a very lazy kind of mindset, which, you know, they would have done some automation come up with some tricks on reporting on ways of, you know, doing some kind of statistics or do it yourself applications, which would really be you know, innovative in a sense, and, you know, can help drive some of these aspects altogether.

Seetal

26:15

Now, that brings us to another imperative for the industry, talent, all these changes inevitably lead to changes in the strategies that are required to engage with future talent. How will mining and metal companies manage talent or define career journeys for future employees? And what lessons can they draw from other industries.

Chandni
26:35

Of course, mining and metal companies will need to engage much more young talent and look, internally to develop these new capabilities. So there has to be an amalgamation of you know, the technology and the functional knowledge or acquiring the business know how to be able to, you know, deal with these kinds of scenarios, as we move into the future. There is also an opportunity to reengage with, you know, experienced and senior practitioners returning to the industries, as I said, it's going to be extremely important, you know, as we see more and more clients wanting us to understand their business process, and then kind of, you know, coming up with a solution, which are more aligned to their business problems, which at the end of the day will help them bring in efficiencies, improve productivity from their business standpoint. Of course, in this environment, you will also have to see new talent management strategies, which will be needed. So, of course, there are going to be a set of principles for the new talent architecture, we'll have to define career journeys for these set of employees who will originate from these industries, we'd have to extend beyond the traditional supply kind of sources and draw parallels with the other industries, for example, oil and gas, which are pretty much similar to how our mining and metals industry client operates. So, these are going to be extremely important and has to be thought through, as we move into the future of this talent group.

Mithilesh



28:13

If you really see as the future of talent evolves, even the rule definitions and the desired career journey in mining and metal will also change. I'm a mechanical engineer, by the way, myself and I also studied metallurgical engineering. The kind of environment you used to expose yourself when you used to talk about the basic blast oxygen furnace-based metal making is no more. And pretty much in five years' time from now, you will really see a very sophisticated, very congenial, very friendly way of steelmaking, if political art furnaces become a reality, and that's going to happen, right? So, what mining and metal companies need to do is they have to really engage with young talent. And it's like really giving the confidence to those 20-year-old people. And we are talking about huge demographic advantage, if you take a look at India as a market or also some of the, you know, emerging geographies. So it's about really how do you create that foundation about the new capabilities, and there is also an opportunity to reengage with some of the senior folks right? If you really see in mining, as I said, a lot of people are pretty much retired, they have huge process understanding, they have understanding about the nuances when it comes to mining because it's at the same time very tricky. So how do you ensure that the people who have had three four decades of experience working in mining, they come back to the workforce even in advisory capacities in consulting capacities to really coach people, these strategies will require defining the new principle for talent architecture, what kind of role you are talking about, what kind of career journey you want them to undertake, as they get five years 10 years into their work life and even at the school, what kind of curriculum will you really introduce for them to not only become comfortable with the entire topic of mining, but also how do we start breaking the myth about that hazard element of mining and make this a matter of pride? How do we really introduce new employee value proposition which really targets the aspirations and the priorities of people who are going to join us five or 10 years down the road.

Seetal

30:17

Professor Shekhar believes that upskilling employees with continuous learning is an idea mining and metal companies must embrace. He also wishes to see future talent develop an entrepreneurial mindset that seeks to innovate within the mining industry.

Rajiv

30:34

ATNP, remember, we had all rows, then we were talking about networks, it was based on hardware, then they were looking after the networks for apple iPhone. So, suddenly the requirement of network exploded and then they shifted to a software-based networking and then what I read was since in that area technology was changing, so fast that they had a collaboration with the company such as Udemy, which provided micro credentials, and hence, there was this process of continuous learning. And so, whenever the new technology came, they did not have to go out and hire all the talent, they are developing their talents in house. So, this continuing education could be in the form of micro credentials. Now for example, in IIT, we are providing an executive MTech program, as far as the employees at least in India are concerned, they would like to do a program which gives quote unquote, a degree or higher degree, which helps them get a job in the same company or outside. So, for example, we are launching an executive MTech program on specialized subjects not on electrical, mechanical, such as geomatics or tunnelling and underground space technologies used in hydropower, metros, etc. So, this continuous learning aspect has to be there. See, we have to develop people with an entrepreneurial mindset. And when i'm saying entrepreneurial mindset, i'm not saying you have to start a company it is a thought process. Or always thinking can I improve on it can I think of something new? Can I...I want to inculcate the skill in the employees to the technologies. And a simple thing is, which we missed is remember electric initially vehicles, automobile combustion vehicles with combustion engines and stick



shaped, and then came cruise control, then automatic, and now you have electric and autonomous this has to start from college, obviously, but this mindset needs to be developed because in the face of rapidly changing technology, you need this skill set.

Seetal
32:49

The discussion on future talent and skill sets is incomplete without discussing EVP or employee value proposition for gen Z, the people who will run the world in the next few decades, young people these days want to see how a company helps them grow as human beings, not just as professionals. So as companies try to attract the best talent available, EVP gains quite a bit of currency, how will they be different from the traditional ones for the gen Z from an industry perspective.

Chandni
33:21

If seen the entire workforce change, you know, from generation to generation. So, while employee value propositions will differ by...By geography, but depending on the local job markets, and the cultural expectations, the traditional employee value propositions are likely to become irrelevant for the future generations is my take at this point in time. And future talent is looking to mining and metals employers to help them meet their fundamental human needs, right, which can be explained in multiple dimensions. Now, while the emphasis on these dimensions will change, it will differ from geography to culture. But Accenture research found that 64% of a person's potential is influenced by you know, whether or not you know, they're better off across these dimensions. So, let me tell you, you know, few of these dimensions, you know, purposeful, which makes a person feel a positive difference to the world, right? What is he or she bringing in, and whether the life has meaning and a greater sense of purpose beyond oneself. The second, which we

all relate to very, very closely is financials. Being financially secure, and I think with this generation of today, they definitely you know, are very, very focused on making sure they are absolutely financially secure from day one, without undue economic stress or worry, or having equitable opportunity, and making sure they're secure from a future stability point of view. That third aspect that I want to call out is a strong sense of belonging and inclusion, which is the relational aspect or dimension, which will dwell on many strong interpersonal relationships that we create within the ecosystem. The fourth, being marketable, being in demand, who would not, you know, want to really have those kinds of skills, where we are employable, we have in demand capabilities and skills. And of course, you know, as you can see the market, which is so very, very fluid, people having the right skills, you know, are in demand as they move in their careers. The fifth, again, very, very important in this era is feeling positive emotions and maintaining your mental wellness, is so very important after what we've gone through in the last few years. And of course, the sixth one is being in good physical health, equipped to take on the normal daily stresses of our day-to-day jobs are going to be so very important.

Rajiv
36:02

After pandemic, the work life balance has become extremely important. You don't want them to work, I remember my student, he was in an investment bank, Salomon brothers' in US, and he said, there's he's working hundred hours a week. So, I suppose that is something which is out. And the other thing that I see with this new generation is that they want to leverage their skills to enhance that. That is the other point that I see here, because package here has suddenly become extremely important. And I hear this, you know, there's a raging issue on moonlight these days. So maybe job security, financial security would start kicking in could become an important factor, the moment we'll see work life balance, etc, then automatically



that job security aspect would come in, may not be like a government employee. But that aspect would become extremely important. One more thing that is important is that the job should be consistent with the aspirations of the students, or the recruits. So I was talking to the tata steel MD, Mr. Narendran, the other day, and we were saying, you know, you hire IIT students in tata steel, they work for a couple of years, and many of them leave. Now about job security, I must say, in tata steel, for example, their whole system is so good. And even in that it will stay over five years, they're not going to leave. So, he said, now they're seriously thinking that for shop floor will get equal with diploma or from other colleges, for better students will have them more in for example, in analytics, more in jobs, which have higher technology required. If that happens, that could be a game changer, especially for the over industries.

Seetal
38:01

Given the sea change in technologies work culture, talent-skilling and employee expectations, etc. What can organizations like mining and metal companies do to unlock the full potential of the workforce?

Chandni
38:15

Accenture research has found that we have five practices around these dimensions, which improve the revenue growth by kind of unlocking workforce potential, we talk about enabling continuous learning to ensure that we have a future ready workforce, where employees can see a clear career path and feel supported to kind of develop these new skills to move into the future, wherein earlier it was more of staying with your core primary skills, or working on those roles or jobs, which was conservative way of looking at things. Listening to people on the frontlines and empowering them with real time data from assets and operations is another aspect you know that we should be thinking on. Using technologies to enable flexible work

arrangements right before the pandemic it was all hands down, have to be in office. But things have changed and where we are looking at, you know, having flexible work arrangements rather than static work roasters, to better suits suit the needs of our future workforce, which will also mean enabling a much more diverse workforce. Championing the workforce wellbeing and equality across the various workforce segments is also extremely key, which has to be enabled by a new leadership thinking and mindset and a change in our DNA around these aspects. And the last point that I want to make sure is also you know, kind of sharing or first and foremost setting metrics to be basically having that transparent kind of a relationship accountable for diversity and equality and working within the ecosystem partnership for creating that one voice for the future workforce is going to be extremely, extremely important.

Mithilesh
40:11

It's about how do we really meet the emotional needs, in addition to only the financial needs of the people who are really working at the site, people who are really operating to ensure that mining companies are producing to the target, right? How do we ensure that we impart the learning to people to understand what are the smartest way to do the job? Is there any alternative through which they can perform their job activities better, at the same time being very safe about things right? How do you democratize the use of technology, make it accessible, give people luxuries as trivial nowadays, as BYOD, wherein people are, you know, free to bring their own devices, in fact, enable when they ruggedized devices, so that they can do their job and also make technology easy for them to use in the daily life. I'll give a simple example, if you talk about smartwatches. And if you extend that to say smart variables, these are pretty much not even 50 gram devices, which have to be you know, worn around your wrist. And what it does is it actually makes work force safe that even if I am there, in a situation wherein there is a Methel leak, or



there is something which is going wrong around me, I can press the button on my beacon, and the evacuation will be triggered. Right? So how do we really champion the safe wellbeing environment, you know, with your workforce is something which is key. A last important point is around how do you give the visible signs of you working responsibly to your stakeholders, including your communities, your own employees, their families, governments, and also the people who are your investors.

Rajiv
41:54

You have to fulfil the aspirations of the people who are working with you. If you set up sensor networks, if you set up communication networks, so that every point of everything that is happening inside the mind is available to you on your desk, that could make a tremendous difference. In fact, a number of companies are already doing it. Mining industry, I have a feeling down the line will also function like electricity, you have a separate generation sector, you have a separate transmission and separate distribution. And then down the line, what you will see they will only own business development and customer services, the network would probably be like what you have heard the transmission network in electricity. And then the separate our companies have come in where all the telecom players subscribe to so and the billing is done by IBM. So, what we expect is that even in mining, there's going to be a sea change. So we already have what are called as management development operators who actually do them. So what I see here is we need people with a multidisciplinary expertise to oversee these people, but at the same time, things like a mind plan has to be done by you, if somebody does an exploration, you have to have geologists who can figure out that they have done a good job, okay. Similarly, mind planning needs people with good mining domain knowledge. So I think both are important. And in fact, our education system now is geared up to that. There is a lot of emphasis that no theory

you have to develop a product. And they're also encouraging when you join with industry and industry puts 20% of the money in the project, okay, then the rest 80% will be funded by the government. So, the government has created a field where collaboration with industry is important or industry is also now, see, you have talent here, you can get stuff from outside, but the amount of money you will pay will be too much. So now industry is also coming forward and we have several such collaborations. I just wanted to tell you about one interesting change that has taken place in ISM in mine. See, the government of India started a technology innovation hub, which is in exploration and mining. Technology innovation hub, across the country across it's etc. And we get the TIH in exploration and mine, what has happened is and now it has been found out as a section eight company, we call it Texman funding. So we incubate we give funding to companies to develop technology for mining, and we have to be self-sustainable. So that part is going on. We have to be self sustainable in a couple of years. So, we have come out with a model where Texman which is actually a company of ITISM Dhanbad, we are collaborating with different industries.

Seetal
44:57

So that then brings us to the all-important question at the heart of this episode, what approach can companies follow to reach, acquire and retain the talent of the future? Chandni and Mithilesh share some insightful views that are now driving the change in the mining sector in India.

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