

**CASE:**

**MOVUS:  
Continuous condition  
monitoring of  
industrial equipment**

**The Innovation**

Brisbane-based start-up MOVUS offers remote continuous condition monitoring for industrial equipment in mining and other industries. The MOVUS FitMachine is based on a sensor which is magnetically attached to the equipment and monitors vibration, acoustics and temperature. Data is sent to the MOVUS MachineCloud and analysed with the help of artificial intelligence to detect deviations from normal operating behaviour. Early alerts warn about possible failures and help prevent costly downtimes. Remote and continuous monitoring also reduces risks and costs associated with manually inspecting equipment at remote mine sites. The start-up is growing and expanding, receiving increasing interest from customers worldwide.

**The diffusion and adoption process**

*What are the factors driving the adoption?*

MOVUS has grown from a small start-up to a company with a customer base which spans a broad range of global industries. A number of conditions and factors have facilitated the diffusion of the new technology and are assisting with further growth.



**Operational and economic advantages of the technology:**

Failure of equipment is a considerable risk for mining operations – downtime of machinery causes costly disruptions to operations. MOVUS’ FitMachine decreases operational risks by continuously monitoring equipment and an AI engine to alert customers of failures in advance. Benefits for mining customers include the reduction of maintenance costs, minimisation of unplanned downtime and hence an optimisation of maintenance and reliability operations.



**Receptive to specific demands from the industry:**

Continuous improvement of the technology based on feedback and demand from the industry has resulted in a new version of the FitMachine which can be used in hazardous areas such as explosive environments; thereby solving customers’ problems.



**Satisfying state-of-the-art trends across the industry:**

Remote monitoring of mine sites from centralised control centres is a growing trend in the mining industry. MOVUS contributes to reducing risks and costs of maintenance in remote locations. In addition, there is an increasing appetite across the industry to utilise technological solutions benefiting from machine learning and artificial intelligence.



**Ease of installation and end-to-end solution:**

Construction and design of the sensor enables a straight-forward installation avoiding time-consuming and costly labour hours. Further contributing to the ease of application is the provision of a service package around the device including cloud infrastructure, mobile app, desktop dashboard and alerts.

“One of the best use cases we have for the FitMachine EX are fin fans or heat exchangers. These are massive fans that sit at the top of plants responsible for pushing hot air out and pulling air down to make sure that the machines don't overheat. And they are really hard to reach. The FitMachine can easily monitor these fans without necessarily having to send staff into hazardous areas all the time. You also have the benefit of remote condition monitoring, where you could be watching the trends or receive alerts on your laptop or mobile sitting here in Brisbane while you monitor your machines in Mount Isa or in Gladstone or somewhere else in the world.”

**Brad Parsons, Chief Executive Officer**



# What are the barriers to diffusion and adoption?

## And how is MOVUS managing these bottlenecks?

While some factors are favourable for the diffusion of MOVUS' technology, challenges and bottlenecks exist. Different approaches and strategies assist with addressing these issues.

### Challenge

As for most start-ups, the early phase has been characterised by challenges to secure first customers. Especially in the mining industry it is challenging for a small start-up to achieve recognition by major corporations.

### Strategy:



Formation of a partnership with an established engineering service company who offers complementary services. This helps to open doors and to market the product across existing business relationships.

### Challenge

Diffusion and adoption of the technology requires communication with a diverse range of representatives from a mining company such as production engineers or information officers. At times, they have varying goals and KPIs, and use different jargon which can form barriers to the development of a shared understanding.

### Strategy:



Identifying a champion within a mining organisation who promotes the technology.



Communicating appropriately to different stakeholders in order to meet their concerns and present contextualised responses.

### Challenge

Mining companies are often characterised by a general resistance to change based on long-established routines and inertia. This can create considerable barriers for implementing innovative technology that changes organisational routines.

### Strategy:



Educating prospective customers about disadvantages of current approach and demonstrating cost and productivity savings through new technology.



Offering pilots at mine sites on a smaller scale to demonstrate the value of the technology.



Using case studies from existing clients to showcase success stories.



Cultivating networks that diffuse and promote the technology by word of mouth.



Emphasising the reduction of risks and costs, and increasing worker safety for monitoring in confined spaces, at heights and in remote locations.

### Challenge

Many start-ups are resource constrained making it challenging to grow the business and to scale up.

### Strategy:



Formation of partnerships with established companies helps to penetrate the market on a larger scale, presenting better opportunities for business growth than individual sales efforts.

“I think it's also a matter of selling the vision, which is something that start-up founders do over and over and over again. It is important to sell not just what you have got today but where you see the product evolving towards because then you can start aligning to strategic goals. It is not just what can be done today but what might be the road map in, say, one year, two, three, four, five years' time because then the offer becomes more compelling.”

Brad Parsons, Chief Executive Officer

“It is about understanding the different players. We have got the maintenance; we have got production; we have got the CIO; we have got the COO. So all these guys not only have different KPIs but they usually have different windows of concern. The maintenance guy might be looking at the next couple of weeks. The production manager might be looking to the next quarter. With the CIO the conversation is more about systems integration and security. And the COO might be looking at two, three, five years forward. So you have to be able to address or at least to have different talking points to all these different players.”

Brad Parsons, Chief Executive Officer

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