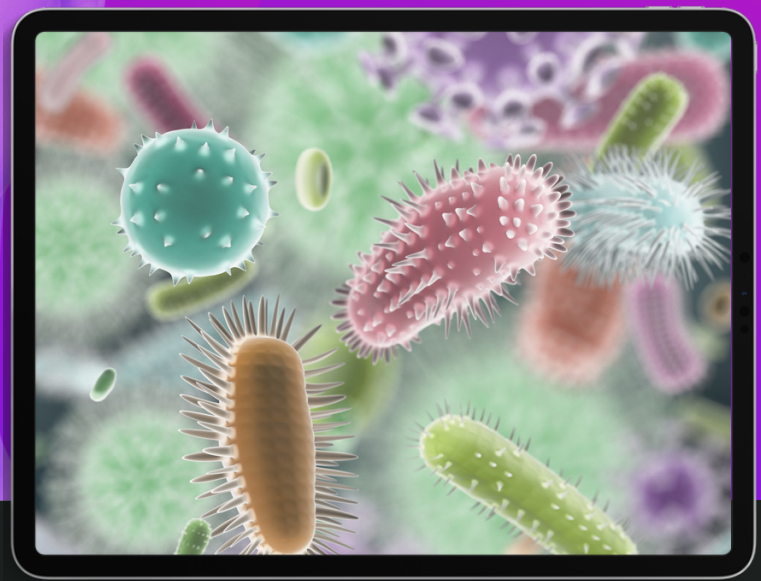


Mega World by ACSILabs

Case Study

# Invitrogen



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# The Abstract

Virtual World Rehearsal or Mega World 3D Smart Space is a pioneering strategic rehearsal tool for business. The heart of the method is a fast paced emulation of the client's real world assets and processes. Cross-silo employees of the client organisation use the simulation to perform their tasks in a high pressure time accelerated environment. The resulting experience transforms staff thinking, decision making patterns and behaviour in the real world.

More than 12,000 people have been through these exercises in more than 50 companies and there has never been a group who did not exhibit marked performance improvements along targeted goals. A Mega World 3D Smart Space is an effective way to implement change quickly and permanently – words that are not traditionally associated with Change Management.

Mega World 3D Smart Space was developed Dr Lia Di Bello of ACSILabs. Onirik is an alliance partner of ACSILabs.

# The Study

The CEO of Invitrogen, biological manufacturing company, had a large backorders problem. This was a real lost revenue crisis. His products (proteins, bacteria and other biological materials) were used by scientists at critical points in their scientific research and drug testing; customers could not wait for backorders and were going elsewhere when his company could not supply them on time.

The reasons for his critical business issue included:

1. The organisation relied on highly experienced but not highly educated 'technicians' to support 'high-end' work. These so-called 'lower level' front line workers were in capacities in which they made 'mission critical' decisions, which had a substantial operational and financial impact. Unfortunately these staff demonstrated an inability to change thinking or to change their way of doing business as quickly as they needed to in order to increase productivity, remain competitive or avoid failure:
  - Staff did not believe there was a problem because their standard reports showed only about 2% of products on backorder at any given time. However, less than 25% of SKU made up 95% of total orders. In reality the backorder ranged from 40% to 80% at any given time and \$800,000 worth of customer orders per day at risk of cancellation.

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- Staff had claimed a long list of excuses and reasons for missing targets. For example, the products were the result of biological processes which cannot, by their nature, have a firm deadline - “Sometimes the bugs don’t grow and you have to start over again”. However, in response to crises some individuals managed to get the right number of “bugs” to grow to the right volume, on time, when necessary - implicit expertise had developed in non-technical staff through experience, but it was not activated in response to business as usual.
- The employees said the forecast indicating what customers would buy was “always wrong” and this explained the high percentage of backorders. But the forecast was in fact relatively accurate, based on customer buying patterns and commitments from customers for future purchases. The production personnel largely ignored the forecast, “cherry picking” work-orders making items they genuinely believed would be needed. They thought they were working around the inaccuracy of the forecast. In fact, they were contributing to backorders.

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2. The company grew by acquiring much smaller companies. Most of these start-ups were composed of small teams of biologists who formulated unique products (such as proteins made by genetically engineered e-coli), patented the process and then manufactured the products in small batches. The acquisition strategy assumed that once a “recipe” was perfected, a technician who is not a biologist could be trained to follow the recipe and make the materials in larger batches. This would reduce costs and increase margins for the parent company while avoiding the time and money needed to formulate new recipes from scratch. However, the collection of smaller companies under one roof brought in the informal small group cultures and inefficiencies of the small labs. The series of acquisitions and mergers had failed to deliver expected efficiencies. The net effect was they had about 25 small independent companies on one shop floor and a kind of scaling crisis that led to a number of serious production problems. This was another case of ‘70% of all acquisitions fail to realise the anticipated benefits’. A strategic assay of the company leadership showed their competency (culture of practice) was revenue growth through acquiring companies (54% strength) but not integrating the acquisitions (7% strength) to drive profit growth. In essence, none of the managers knew how to run the financial side of the business.

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3. The CEO liked to have people come to him with problems which he'd solve for them. He didn't have the habit of "teaching them to fish for themselves."

The capabilities that the CEO said he needed included:

1. To reduce the high level of back orders (i.e solve the mission critical problem) in the business as a whole he wanted to:
  - Leverage the workers' content knowledge of the work itself - specifically the 'low level' front line workers who had developed the ability to accomplish the job only under crisis conditions.
  - 'Empower' the front line to devise a solution and thus increase the chances that the solution would transfer back to real on-the-job work.
  - Hold the staff accountable for the 'non-negotiable' performance targets of the company.
  - Sustain the results in the long term.
  - Find a low risk way to prove it was possible to be on time when making and selling biological products on a large scale. He wanted a method of aggressive intervention that would help his people 'unlearn' old thinking and then 'relearn' at a preconscious level but not expose the business to risk.
  - Employ an intervention where:

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- It was a participatory process, whereby the solutions was not predetermined, but rather would be allowed to emerge from situational constraints.
  - the team to conduct problem solving in a realistic manner in a safe environment to practice making complex decisions in complex real world emulations.
  - multiple practice opportunities and opportunities for feedback that may highlight specific dysfunctional thinking patterns among individuals or teams and help them clearly understand the inadequacy of their default mental models in the business and develop new responses to and generate newly adaptive mental models.
  - It would lead to the development of common goals and departmental cooperation - individual decisions and behaviour consistently aligned with wider corporate goals.
2. A successful integration of the merged companies into one unit, one culture, and one company that would yield the higher revenue, higher profits, and higher share price. He wanted to see the financial benefits upon which the acquisitions were originally justified to investors.

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3. 1.The CEO, when approached by his leadership team with problems, would use the opportunity to coach and develop his staff to solve the problems themselves and build their capability to manage the financial side of the business. In this way he could identify and develop a potential successor.

# The Results

A Mega World 3D Smart Space or “operational simulation” helped the client develop these capabilities. The shop floor’s major functional areas were replicated in an undeveloped section of the company’s facilities together with simulation software modelling the ideal financial profile of a company with growing sales and no missed shipments. The fast-paced exercise also derived a “tracking stock”, showing how high performance would translate into a rising stock price. At the start of the exercise, participants were simply told that in order to win they had to meet all customer orders on time. The only feedback they received was a dynamic dashboard, projected on the wall, showing the financial impact of their decisions and actions.

Four groups of 20-25 people, ranging from director level to R&D and shop floor staff, participated in the simulation exercise for several hours. Each group got two chances to achieve the target outcomes. The team with the solution that solved all problems and contributed to increased profits would be the winner and their solution would be implemented on the actual shop floor.

All groups failed on the first try. In fact, they replicated their lateness, cost and inventory problems almost exactly as they were in real life, with similar financial consequences. Their simulated companies suffered declining stock prices as revenue forecasts

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were not met. After a sleep cycle which gives the brain a chance to reorganise its defaults, all groups were given a second try and exceeded the desired outcomes. The skills they developed in the process were not what is normally targeted in training. Rather than working faster or following new procedures, they developed a greater understanding of manufacturing's role in the total business. Rather than focus on local goals, they focused on tailoring their activities to higher level goals, such as revenues, profits and the impact of these on stock price.

The project was a great success. When they returned to work, the staff implemented the behaviour changes, shop floor design and metrics that emerged from the winning team during the exercise. Within four months the backorder problem was cut to less than \$350,000 by the same workers who thought it was an unsolvable problem. Two years later the shop floor had maintained its performance objectives and continued to reduce the backorders to \$25,000. Five years later the backorder level was retained at less than \$20,000.

The project paid for itself in under three months generating an ROI in excess of 600%.

For more information go to  
[www.onirik.com.au](http://www.onirik.com.au)

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