

# The Innovation Quality Paradox

Quality rules, regulations and activities are a common and costly occurrence in the manufacturing field. Good Manufacturing Practise for instance, the quality norm regulating pharma manufacturing, requires an annual global investment of approximately 10 billion USD. Compared to that, the industry's investment in quality activities in the innovation field is small to non-existent.

This is partly driven by a peculiar view, picturing innovation and quality rules as poles apart. Innovation is seen as the hot spot of creativity – not to mention creative chaos – while quality rules are associated with barriers, gates and fences, designed to preserve the existing and getting in the way of changes. From this point of view innovation and quality rules do not mix well and should be kept apart. The fact that this view comes with cost saving by avoiding quality activities in the innovation sector is frequently seen as an extra bonus. Does this “do not mix” attitude survive a closer analysis?



**Innovation Quality?**

## Innovation Quality Paradox

Manufacturing processes deliver clearly defined products, exactly specified through measurable parameters, allowing to assess product and process quality reliably and retrospectively. Innovation processes on the other hand deliver frequently just read-outs from experiments that have been designed based on a hypothesis and will be interpreted in the frame of the same or a slightly modified hypothesis. Due to the inherent uncertainty and complexity of innovation, a reliable retrospective quality assessment is frequently not possible.

Most manufacturing processes are well established, frequently validated and usually known for years to deliver consistent products. Innovation on the other hand tends to use completely new and hardly tested technologies or applies established technologies in a new set up, in both cases operating with a rather reduced knowledge about technology or methodology performance and a dangerously low knowledge about result quality.

*„Quality Paradox  
- less defined  
- less established  
- greater risk  
but  
- less precaution.“*

1

**▲ PERMANENTS**

The Innovation Quality Paradox

Common sense would obviously suggest to apply more quality considerations to the innovation field, thus building at least defences against those risks that can be reasonably addressed. As we all know, the real situation is the exact opposite. This comes with significant risks to management.

### **False Negatives and Worse**

Common to all innovation processes are results that do not match the expectations of the underlying hypothesis. Such a result might be a true negative, killing the hypothesis and the innovation in one go, or it might be a false negative, just looking bad due to sloppy experimental performance, due to malfunctioning equipment or due to the good old copy-paste error. The reflex action of many innovation units to results not matching expectation is experimental repetition, which will in the best case deliver a second negative.

Getting a positive result from the repetition creates the common dilemma of which result to trust since both are equally likely. One way to solve this are several additional and costly repetitions, leading to a sort of scientific democracy, with the majority of votes winning. In daily practice, quite a lot of innovation teams take a simpler route. They just pick their preferred result, move ahead and potentially waste resources on a lost cause.

Even worse is the second case, results matching the hypothesis but being wrong nevertheless, in short false positives. Since results within expectations are rarely questioned, innovation teams will certainly move ahead, wasting time and resources on a wild goose chase that got initiated by quality deficient results.

### **Danger to Business and Management**

The quality of manufacturing processes and the resulting quality of products have both a strong focus on external risks, the safety of the customer. Innovation quality in contrast comes with a strong focus on internal risks which all too often do not receive the necessary attention. Quality deficiencies can endanger the complete innovation process and at the end of the day the business and the management as well, the former due to lack of innovative products and the latter due to bad decisions based on unreliable innovation data.

Innovation comes with inherent uncertainty and complexity, has usually an above standard risk of failure, frequently operates at the edge of technology and methodology and impedes retrospective detection of mistakes or errors. Business processes as capricious as innovation should receive a sufficient amount of quality investments, sufficient to prevent at least those errors that can be prevented. Question is – who should initiate quality in innovation? The innovation units, existing quality units – or somebody else?

More to that in one of the next issues.

*„Quality deficiencies waste time and money.“*

*„External and Internal Risks.“*

*„Capricious Innovation.“*

2

 **PERMANENTS**

The Innovation Quality  
Paradox