Can we ever escape from the side effects of production pressures?

By Stathis Malakis

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There are quite a few production pressures in the ATM system. The most important categories include those that spring from safety, capacity and financial targets. These are well documented and constantly communicated from the higher levels of management down to the front-line controllers in the operation rooms. For example typical targets in this category include a reduction of 5% in en-route delays, the containment of the number of serious incidents below 1 per 100,000 movements and the reduction of the cost per flight controlled by 3%. These performance targets are included in the annual reports and the safety, policy and operational documents of any ATM organization. They effectively form the performance yardsticks by which the combined output of ATM organizations, from an ANSP and a large Area Control Centre down to an Approach and a Tower unit are formally evaluated.

The collective processes of fulfilment of the performance targets generate what we call production pressures in the ATM system. Production pressures of this kind are obvious in any type of ATM organisation. Following the standard fashion of doing business, the annual capacity, safety and financial output of an ATM organisation are evaluated each year against the predetermined performance targets; positive or negative deviations lead to appropriate corrective actions through managerial actions and processes.

"But, are things as simple as they appear?"

Contrary to what is normally expected the answer is No.

Productions pressures are also linked to another type of output, which is hard even for insiders of an ATM organisation to see. When the clearly stated and well documented performance targets intermingle dynamically with the operational, technical and social complexities of the ATC operation rooms and their parent organisations, another type of output is also produced. Production pressures give rise to an unanticipated set of phenomena that are not written in any document and no formal means of communication to the higher levels of management exists. The net result is unpleasant effects that happen in addition to the main effect; or to put it simply, the side-effects of production pressures.

But what do we really mean by production pressure side-effects in an ATM system?

It is neither possible nor desirable to cover all the side-effects of production pressure in the restricted space of a small article. However addressing even some of them can provide us with a clear view of the magnitude and the severity of the issue. So let's just portray a small set of practical examples:

- A noticeable increase in the operational personnel who choose to work part time in the opeations room. Behind the officially stated reasons (e.g. medical, family reasons) the true reason for the choice of the part-time option is often that an increasing number of operational personnel cannot effectively cope with the shift work rhythms imposed by the increasing traffic levels. Other non-safety related reasons are officially stated, for in reality, the management cannot accept safety as being the true reason. For example a controller cannot state that he/she cannot cope with the soaring traffic levels and has valid reasons to believe that it is no longer safe to provide ATC services.

- Groups of non-operational personnel may treat controllers as "second class workers". When a controller tries something different (e.g. attending a management course or skills development course) the management may refuse, based on the premise that it is not in the controllers' job descriptions. This effectively creates an impression that controllers are not considered fit to advance their careers outside the operations room – with some rare exceptions just to prove the general validity of the rule.

- Groups of non-operational personnel are expected to make real inputs to the operations rooms but controllers are not expected to make real inputs to non-operational groups. Through the various management processes, operational controllers get the impression that almost any non-operational staff can make proposals that directly affect work in the operations room; meanwhile constructive suggestions from the controllers to improve the working of non-operational departments are not encouraged or welcomed.

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• Some controllers who cannot cope with the increase in traffic, display quite noticeable symptoms in their everyday operational and social behaviour (e.g. aggressiveness, lack of motivation). A few years ago, many controllers reported for duty well before the commencement of shifts (especially nightshifts); the tendency today is for more and more for personnel to report for duty at the last minute. To put it simply the constant struggle with high levels of traffic takes its toll on the operational and behavioural patterns of the controllers.

• When someone from the operations room is promoted to a managerial position his/her personality changes immediately. For example in a large Area Control Centre a shift supervisor completely changed overnight when he got the managerial position he had always aimed for. He used to be relaxed during the shift, even allowing fellow workers to go home early; but when he got the managerial position he did not hesitate to officially report a controller when he was just five minutes late on shift.

• Important operational-related tasks are prepared in a hurry to meet managerial requirements. For example a team of instructors quickly prepared a refresher course without having any specific guidelines, using only a minimal set of high-level requirements that were presented by the management. The aim was to meet the directives and the pressing deadlines of the parent organisation and the strict requirements of the quality system.

• Controllers very often sense a strong feeling of isolation from the management. It seems as if the managers only care for numbers, directives and deadlines and are not interested in the real life of an operations room. The increasing distance between management and front line personnel has a direct impact on the motivation levels of the controllers. Distance created by a preoccupation with numbers, directives and deadlines adversely affects the controllers' motivation.

These are some of the real-life vivid examples of the side-effects of production pressures in operations rooms. They convey the message that the side-effects are real phenomena. Some readers may be familiar with a number of them, some may not, but hopefully everyone from front-line controllers to top management can understand that production pressures achieve more than statistics, requirements and deadlines. The living operational context must be taken into account when putting data into a frame for interpretation. If we fail to consider the effects in the operational context, the numbers are reduced to simple algebraic symbols with no meaning other than performing simple arithmetic operations.

Production pressures generate not just the desired effects: meeting targets, requirements and deadlines; but create side-effects while doing so. If the operational context is distorted as a consequence of the relentless pursuit of targets, then many other things may also be distorted. To put it in another way, the statistics may look good, requirements may be fulfilled and deadlines may be met – until an incident or even an accident happens … and then, everyone will discover in hindsight the hidden side-effects of production pressures in the direct or related causes.

By understanding the severity and the magnitude of the issue, three difficult practical questions emerge:

1. How can we effectively map the side-effects of production pressure in the operations room?

2. How can we minimize or even nullify their consequences?

3. How can we impose an efficient mechanism to detect the side-effects of production pressures?

The answers to these questions are neither simple in nature nor insignificant in relation to other important issues in the present and future of ATM system operations.

This article does not pretend to give a clear, concise and universal solution. Answers are difficult and above all too context-sensitive to be explored briefly. The aim is to trigger an initial awareness of this important issue and draw the attention of everyone, from the individual to the parent organisations that bear the responsibility for handling and at the end of the day solving the problem. The true aim is to set in motion those forces within the ATM system that will eventually lead us to the much needed "escape" from the unanticipated and undesired side–effects of production pressures.

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