

Transforming a Military Personnel Policy.

-Learning From a Model Supported Intervention.

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Abstract

The Norwegian Armed Forces used to have a unitary personnel policy. All officers were recruited with prospects of life-long employment. The long time constants in such a system meant that a transformation into a younger corps was almost impossible to achieve. The model-supported intervention significantly reduced the probable risk of failure in policy design and implementation. A number of achievements must be attributed to the model intervention per se. First, the model's base case projected a 100% surplus of senior officers. This was an eye-opener. Moreover, the lack of suitable options within the current policy regime became obvious. Finally, the suitability of the new policy was convincingly presented and its implementation success virtually secured. The success of the model intervention is discussed.

Though the most aggregated model sufficed analytically, the existence of a more detailed model that reflected the production system, crucially enhanced the analysis' face validity, especially as a cost analysis was called for. However, more critical than the model's transparency was that the results fell within the comfort zone of most key stakeholders. The results challenged intuitions enough so that the model was

considered invaluable, but not so much so as to question the approach. Moreover, the institutional credibility of a research organization was another critical success factor, furthered by an atmosphere of mutual trust within the combined client-analyst team.

Background

Most western nations developed Cold War defences that consisted in largely mobilizable forces. The thinking was that in case of a war that threatened a nation's survival, the entire state's productive capacity should be mobilized towards the territorial defence. This system of mobilization in Norway also reflected this logic. All men were conscripted and went into a full year's training after age 18, and were retrained every four¹ years. Sheltered around in various garages and docked in harbours were the vehicles, equipment and ships that should be used by the mobilized masses in case of war.

The non-conscript, full time, manning consisted of three types of uniformed personnel. One type were those junior officers who trained the conscripts. In the Norwegian case these were largely last year's conscripts and others who had gone through basic officer training the previous year(s). Then were the caretakers of the mobilizable men and equipment, in particular those who maintained vehicles and weapons. Only a fraction of the equipment pool was in daily use, the rest was mothballed. Mothballing was quite personnel intensive. Last was a cadre of people, mostly experienced and thus older, that filled positions needed to plan in peacetime and command in wartime.

As the Cold War ended, a possible re-emerging invasion threat from the east appeared increasingly less probable. Correspondingly, the mobilization system became increasingly obsolete also. In the case of Norway, this did not mean that the conscript system was abolished, but the ratio of mobilizable to active forces was successively reduced during the 1990'ies so that in 2002 most units were active units.

In addition, the 1990'ies saw the emergence of expeditionary type operations that involved defence organizations across Europe, not only in states that historically had been colonial powers, such as France and United Kingdom. This trend also spread to

¹ The design was three to four weeks, every four years until age 45. In reality, the average frequency was less than once every ten years. Also, a numerous Home Guard trained a couple of days every year.

Norway through a shift in declared NATO policy first – and later a shift in national policies.

The shift in various operational and support personnel categories is shown below in figure 1.

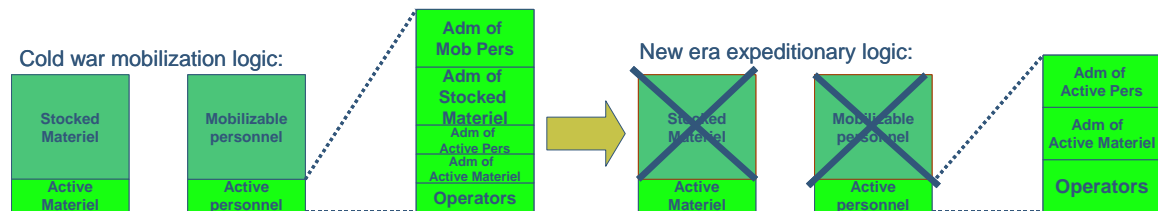


Figure 1: The consequences of a shift from cold war to expeditionary era operational logic

This implied a shift in national security thinking– away from a *direct* national defence against a threat to the state’s survival, towards an *indirect* defence strategy where the threat was primarily seen as one towards our friends where these friends and their corresponding enemies would meet and fight. Consequently, the need for operators, who could be sent around the globe with a minimal delay, increased. Operators are largely young. Conversely, the need for experienced equipment maintainers was reduced drastically: With fewer mobilizable persons to equip, the stock of equipment could also be cut. Equipment maintainers need not be young.

At the same time, the 1990’ies saw a general staff downsizing so as to reduce active manning by about 1/3. Most of this was done through a near 50% reduction in the intake of men to the 10-12 month conscript period. The harder part was to reduce by ¼ the paid civilian and uniformed work force. Especially the latter enjoyed a generous job security and a retirement age of 60. Hence, a policy of choking intakes to officer training programs was instituted in conjunction with generous special early retirement options. Though the extraordinary retirement plans for older officers were criticized from being too lavish, the combined effect of also choking intake of younger officers was that the proportion of officers of higher rank and tenure did not shrink as planned, but increased, as shown in figure 2 below.

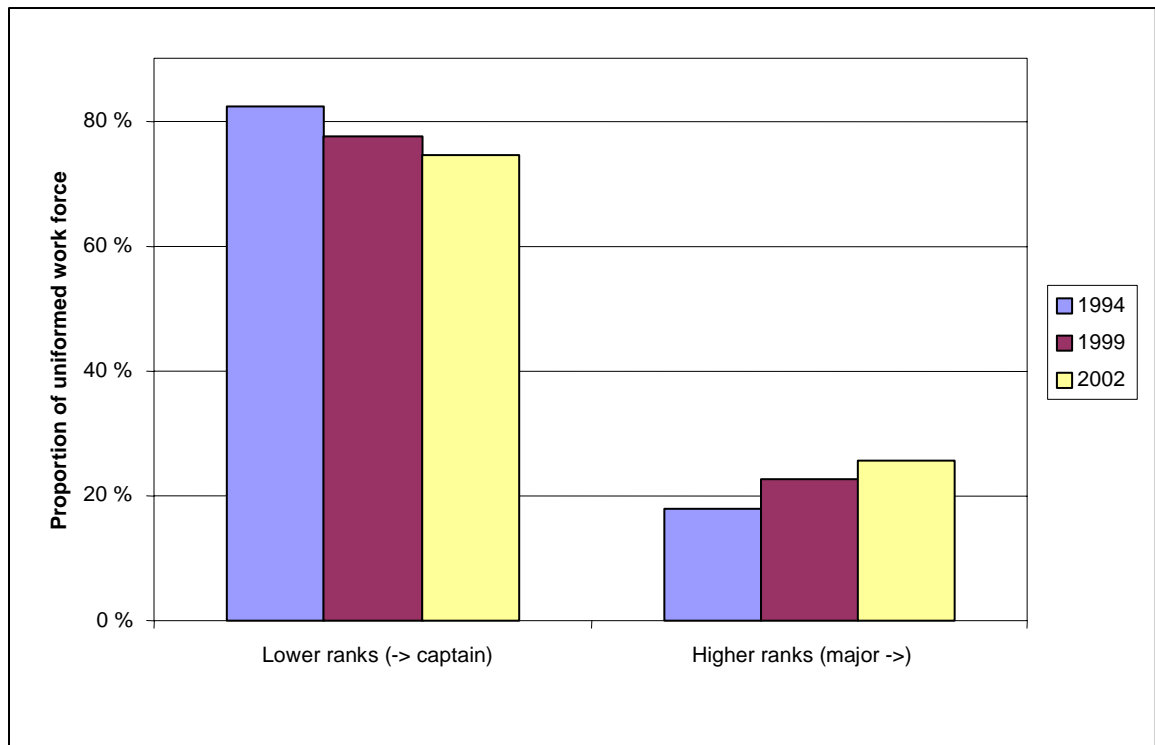


Figure 2: Increased relative size of higher rank officers. Near 50 % increase among higher ranks

Figure 3 shows projected need for younger and older officers after 2002. Though the shown projections were made as a study unfolded, major players and documents had qualitatively indicated a further reduced need for older officers and increased need for younger ones. As mentioned above, the need for younger officers mostly in relative but also in absolute terms had already been on the rise since 1990'ies – a trend that appeared to continue into the future.

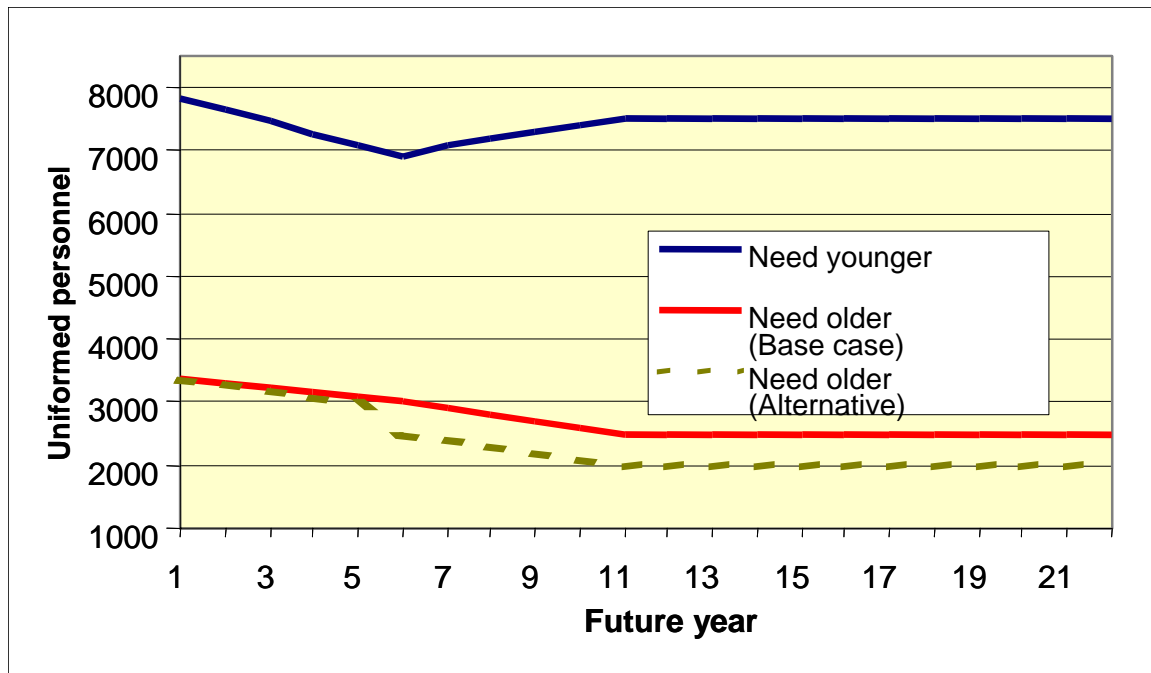


Figure 3: Projected future decreased size of older (i.e. over 40 years of age) officers.

The organization thus found itself in a situation where the need was for a more agile and younger corps of uniformed men, but the combined set of personnel policies produced the opposite – an aging force.

The increased need for a rejuvenated officer corps accelerated in the 2000-2002 period as their desired proportion increased in three consecutive strategic documents. The first of these documents had mandated a personnel policy study.

Process

The initial plan was for a largely qualitative study. This would involve a classical “staff study” where the general problem would be stated first, and options to solve the problem would be presented second, and then discussed later. Last a conclusion as to the chosen option would be made.

The options were planned to be various Nordic and NATO national personnel policies. Quantitative analysis was foreseen only in the context of static cost comparisons between the various options.

At the outset it was clear that one option would be to study a dual category officer corps, one category of academically trained staff officers with a high retirement age, another of professionally skilled non-commissioned officers with a much lower

retirement age. This was very similar to the dual category system that was abolished in the mid 1960'ies on grounds of not giving everyone equal opportunity. In the abolished system, uniformed men without high school diplomas were unable to progress to higher ranks and doomed to low pay, status and less demanding job content.

The labour unions that organized officers did not favour a new system that could be termed a two-class policy. Consequently, the choice of a study project leader was tricky. He should ideally have confidence among the current senior elite who favoured a transformation, and the labour unions who favoured status quo. The project leader eventually chosen had been involved in several previous overall defence planning processes and so knew both critical content issues as well as organizational politics. In terms of confidence building vis-à-vis the unions; he was also a former official of one of them. His latest assignment was a Ph. D. candidature in history.

He reported to a board chaired by the secretary general of the Defence Minister's personnel section. In this board there were a dozen representatives, also of the two major labour unions.

System Dynamics enters

The dynamics of aging chains are often used in system dynamics applications (Sterman, 2000). The abovementioned dynamics of the Norwegian officer corps are not complex to a system dynamicist. On the contrary, he or she will look for relative growth of people of higher rank and age in an organization where growth stifles or reduced manning is initiated – especially if reduction is a result of choking recruitment of young people. System dynamics tools are especially well suited for illustrating the effects of such twisted aging chains.

As a result, a system dynamics research director had looked for some time for a vehicle to disseminate the illsuitedness of previously tested personnel policies and longed to design new ones. He was thus quick to offer his services to the project manager who was already acquainted with quantitative analysis from previous work with other operations researchers.

It took the system dynamics professional only some afternoons to design and roughly calibrate a model showing the effects of choking recruitment on the balance of older and younger officers. Exposed to this “feasibility study”, the project manager was quickly convinced and was able to finance a broader study.

The broader study was organized in two stages. The focus of the first stage was to convince the stakeholders, especially the trade unions, that the current policy could not be twisted to be productive. The second stage would attempt to finalize a new, cost effective personnel policy.

The first stage started with estimating the future need for officers of various categories. As credibility was the crux of the matter, a detailed brake-down of current personnel categories was suggested, using the administrative categories devised for personnel planning. There were however several problems with such an approach. First, it would take time. But more importantly, though detailed and well-articulated plans existed for the current year, no such plans existed for future years. Hence, a more high level approach was chosen.

Figure 2 above had been presented previously to the several senior defence audiences. Using only two categories (high and low rank officers) was hence a well-tested formula. The pedagogical advantages of a simple message were obvious. Formal projected need for personnel did not exist and had to be made. Hence, transparency in these estimates would be key. Fewer categories meant fewer assumptions to be explained.

Other, costing, purposes had resulted in a total defence development plan. Here, paid personnel was an explicit output. A 20-year cost projection model was hence used to produce future personnel needs. However, the brake-down in this detailed costing tool was for service affiliation (army, navy, air force) and not rank or age.

Consequently, two methods for devising need by rank/age were chosen. The first method used an already assigned organizational force categorization (“operational”, “education”, “senior staff” or “support”). It was argued that the first two required mostly younger officers, and the other two mostly required older. The need in the two former was then set to “100% young officers” and the later “100% old officers”. The sub units of each category were then followed over the 20-year cost projection time

period. As units of the former two categories were mostly stable and the latter were mostly being phased out, this “method 1” gave the dramatic development already shown in figure 3 above.

A second method was also devised. Here, an expert panel was formed. These experts divided the personnel database of the costing model above, and assigned the proportion of younger personnel for each organizational unit. As these organizational units were phased in and out along the time axis, as explained above, a different mix of younger and older resulted. The method 2 results are shown below in figure 4.

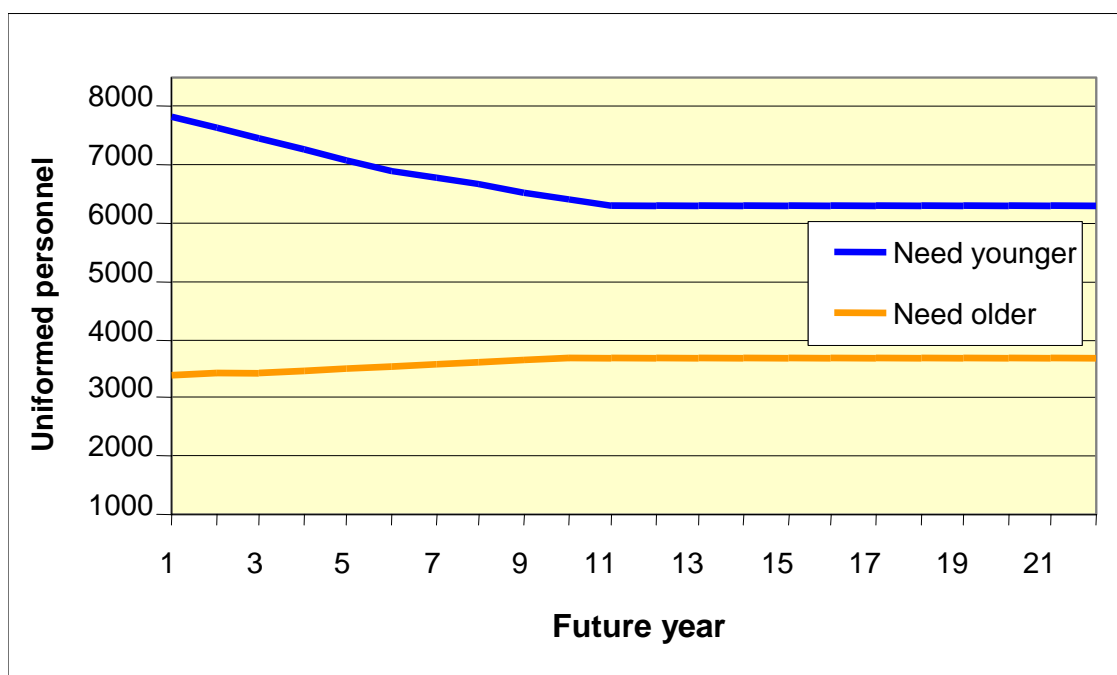


Figure 4. A different estimation method gives the opposite trend in future need for older officers.

Figure 4 tells a different story than figure 3 above. – The story of a force that successively requires a more experienced and thus older force. As this second method produced counter – intuitive results to the project team, the system dynamicist suggested that it be left out. However, it was decided that both methods would be included in a composite estimate, where the methods’ projections would count for half the weight each.

This composite estimated need is shown in figure 5 below. This served as a benchmark for the further analysis.

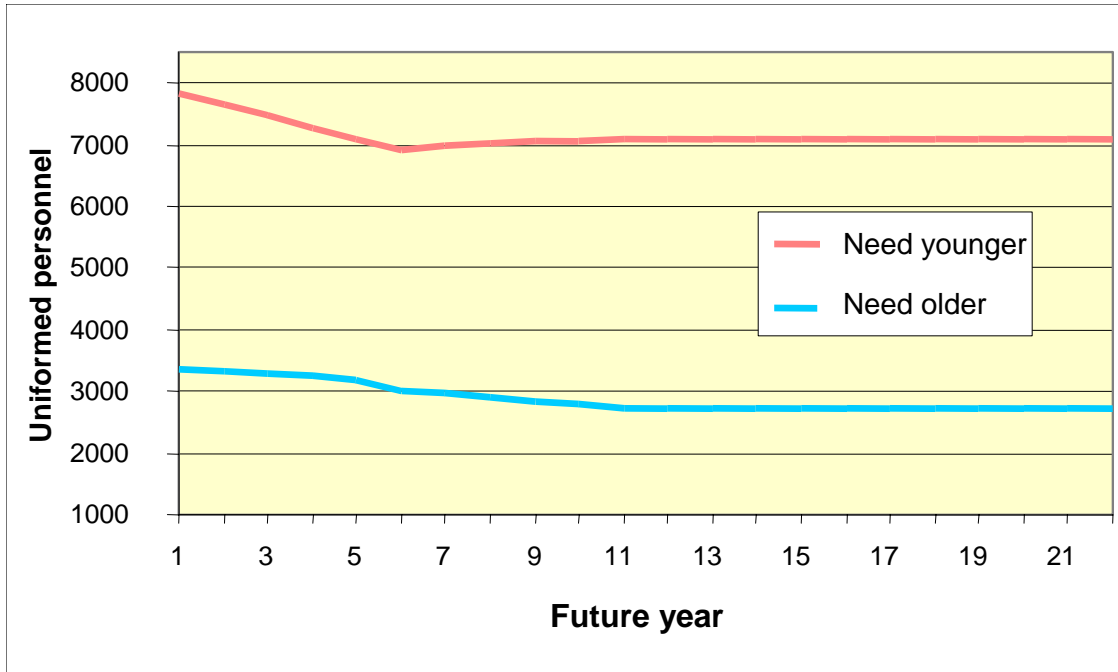


Figure 5. A composite estimate of future personnel needs.

As the first project presentation to its board approached, it was decided to present three different personnel production options, using the present policy. The first one was called “base case”, where current relative recruitment and retirement figures were left unchanged. This is shown below in figure 6.

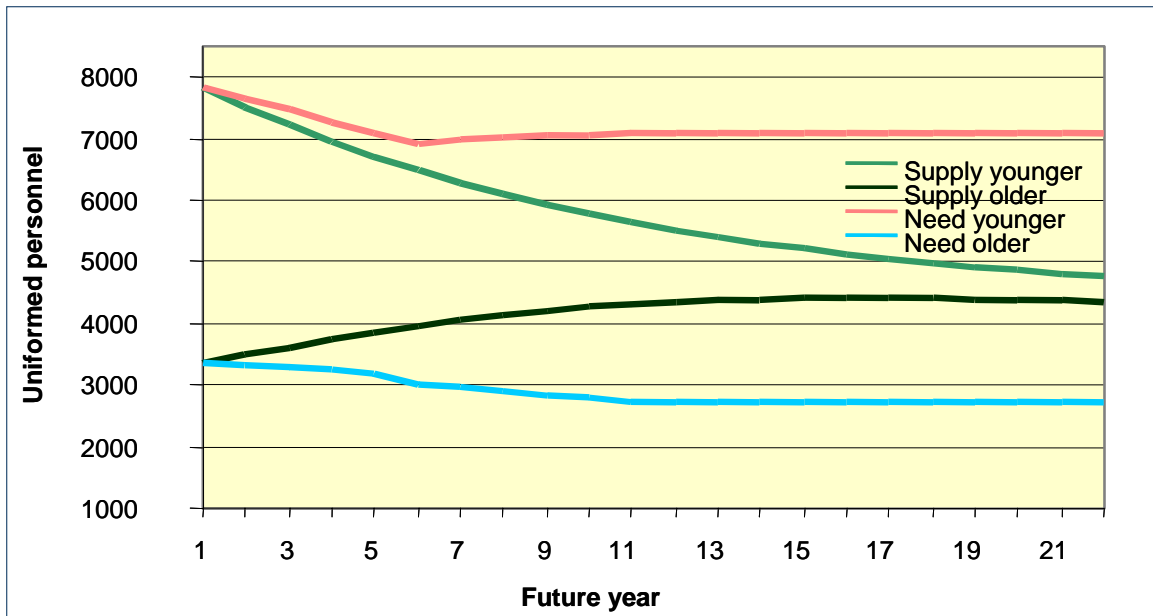


Figure 6. Base case: Opposite trends in need and supply dynamics.

Figure 6 confirmed the intuitions of the team; the current policy continued to deliver an aging force, just as a younger force was needed. Indeed, after 22 years, the supply of older officers approaches twice the need at that time.

What would happen if at least the supply and demand for younger officers were to be balanced in the future? This option is problematic, as shown in figure 7, as its side effect, the surplus of older officers, reaches more than twice its demand.

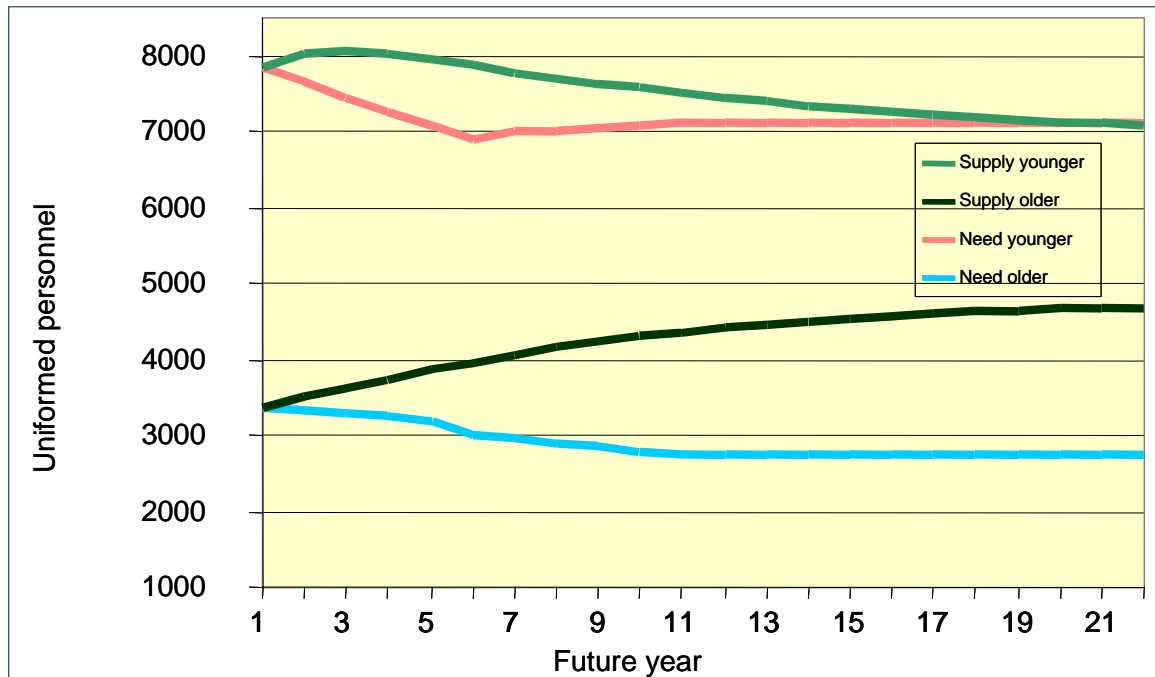


Figure 7: Achieving a good supply of younger officers also delivers a flood of elderly...

In figure 8 below, this elderly surplus problem is (almost) solved, by totally choking recruitment - only to achieve unsupportable deficiencies among the younger.

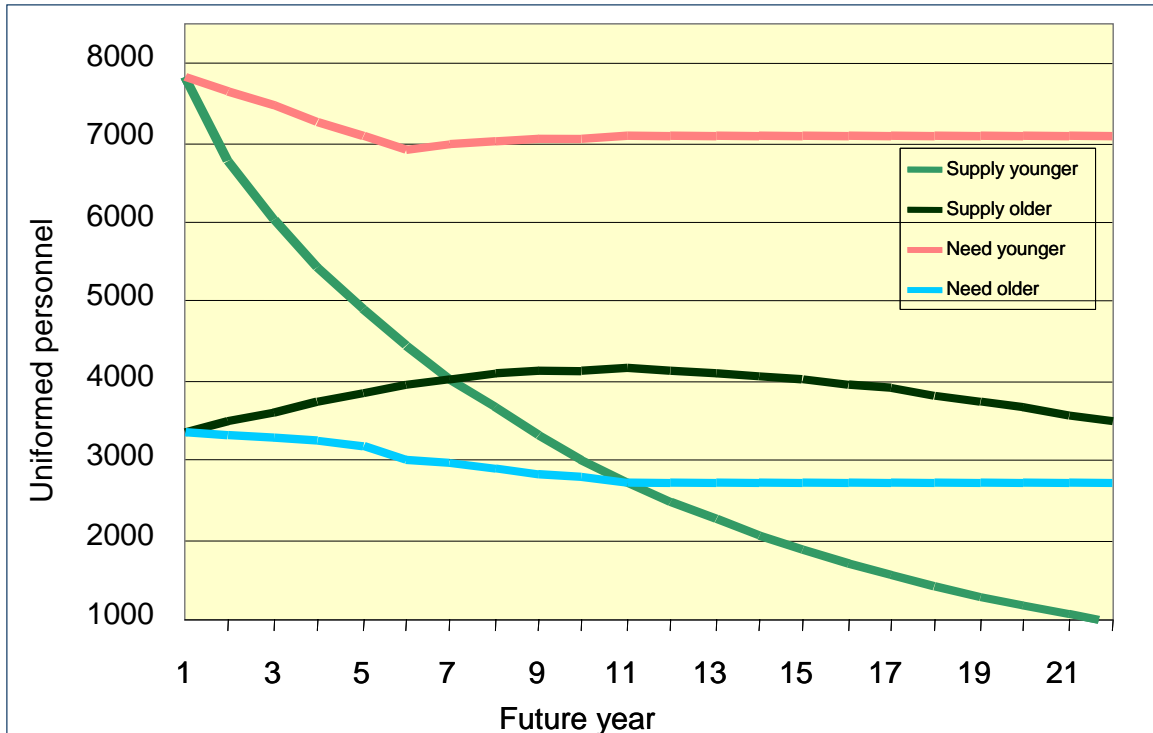


Figure 8: Achieving a good supply of older officers kills the supply of younger...

The above production figures used the following stock- and flow structure as an aging chain.

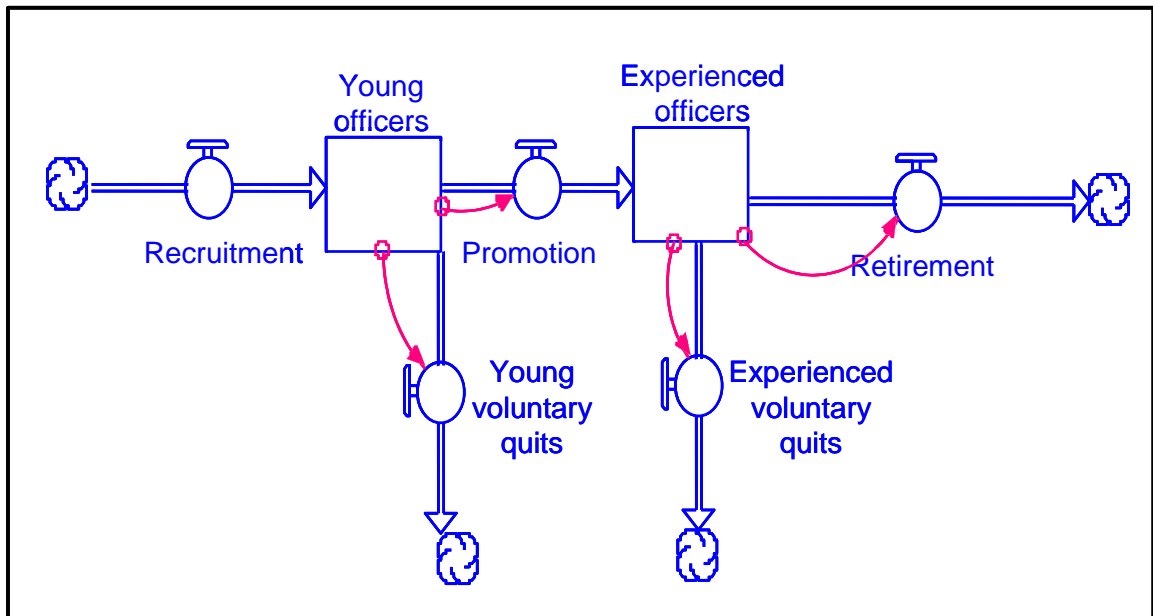


Figure 9: The simple aging chain.

The presentation of all of the above figures (2 through 9) was done in the first board meeting. The union representatives were very critical. The reason why so many were promoted to higher ranks, they argued, was that the organization needed people with

high average experience level. They said that the real problem were managers on all levels who always provided arguments that they needed more experienced staff. This inflation of rank needs was crucial. Luckily, figures 6, 7 and 8 provided a strong counter argument. Even if assuming that the observed trend in inflating rank needs continued, the current production system would still grossly overshoot these inflated needs.

The board thus allowed an investigation of new personnel policies. In order to be informed about policies in place, a “tour d’horizons” was made. Information was gathered about how various nations had organized their personnel production systems. These could be classified as to whether they had more lavish retirement plans for the experienced officers, so called “up or out” policies, or whether they focused on a separate track for junior personnel. Several nations followed a combination of the two production systems.

At this stage, a cost analysis was performed. This analysis investigated how much it would cost, in Discounted Cash Flow terms, to follow four different productions systems (Østbye, 2004). It appeared that a dual track system was the least costly. This system is shown in figure 10. Here, all recruitment is done to a stock of young non-commissioned officers. From here, the main track is the top one. Getting a minimum of formal education, officers stay for a maximum of 15 years, with 5-10 year the typical tenure within the system.

The bottom system recruits from the top one, but in this subsystem, retirement age is typically 60 years, allowing for 40 years of service.

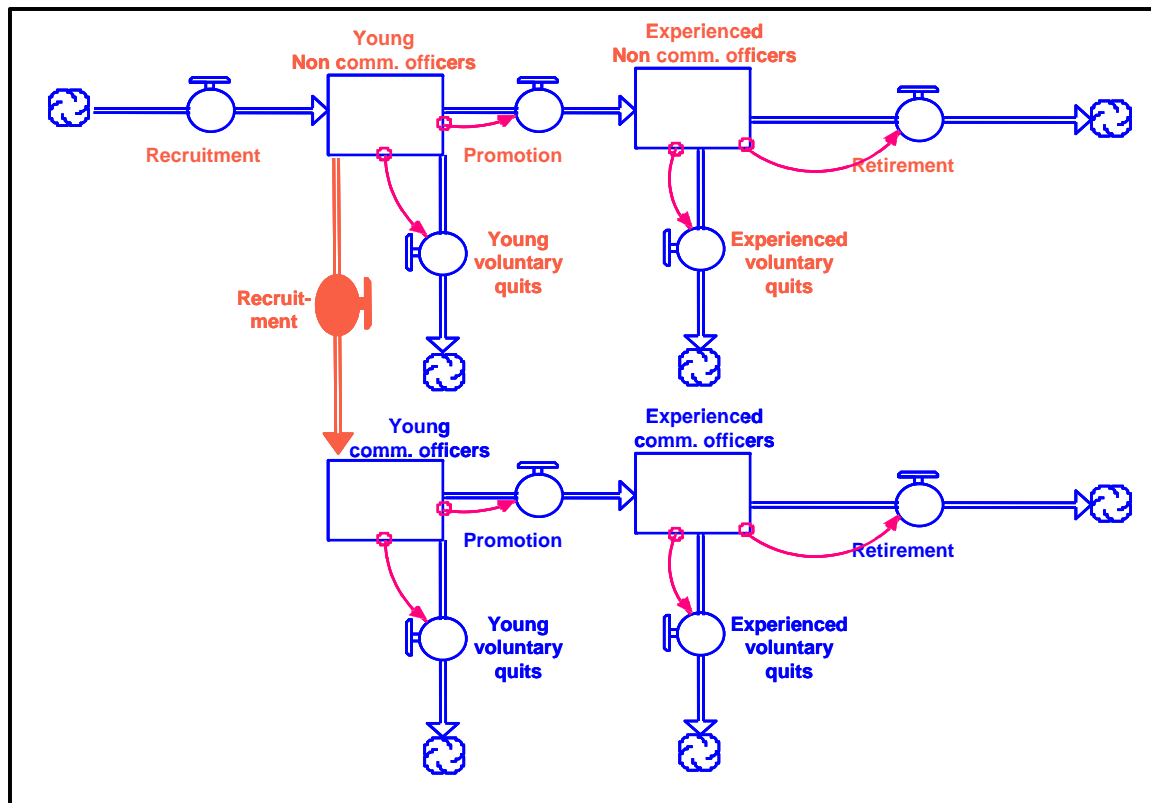


Figure 10: A dual track personnel policy. In the top (new, red) track people stay for a maximum of 15 years. In the below track, 40 year is maximum.

The simple second order model was critical in convincing both the personnel policy board and other executive bodies that the current unitary personnel development policy could not work, regardless of parameters chosen. Though especially the labour unions attempted to discredit the model's assumptions and lack of validity of both model and modellers, the model (and the modellers) insight remained robust.

The initial model was a simple second order model with the two categories "young" and "old". To reflect the intricate details of the officer flow, a much more detailed model was developed. This model enabled an explicit representation of various training and schooling delays. This was deemed necessary to test out the various new policy options. This model was the basis for the cost analysis and documented elsewhere (Østbye, 2004).

Implementation.

The new personnel policy represented less job security for the majority of military officers. Those in the top track would not have a job for life, but only for 15 years. This posed strong demands on the quality of explaining the new policy's rationale as

the labour unions continued to argue against the transformation of the personnel policy. Their arguments had been unsuccessful in the project board, but made new attacks along those lines described above, reflecting also the mentioned mid 1960's arguments. But the poor fit of the old policy in face of combined new challenges of transformation and downsizing were just to persuasively presented through the simulation study.

The new policy was also baked into an ongoing bill to be presented to the parliament spring 2004 by the centre-right government that controlled less than 1/3 of the seats in the parliament. In this bill, the logic behind the new personnel policy was captured in verbal statements reflecting figures 1 through 9 above. The bill was met with broad political support and passed comfortably. Such political consensus was quite unusual in other political areas; the minority government often had to make substantial amendments to its bills to have them pass in parliament.

Already in 2005, the new policy was implemented. The new trade of non commissioned officers were recruited. As the new personnel policy also included a stronger three-service recruitment process, the earlier stovepipes of the three service recruitment processes were abolished. This led to both a higher recruitment in general, and higher retention rate of those who were offered positions.

Similarly, the stronger focus on academics in the "bottom" track made it easier to argue for even higher academic standards for this track. This was one of the reasons why an internal Masters degree in military studies was to be offered by the Military Academy. Previously, this Academy had offered no academic degrees at all.

All in all, the two-track career system fitted in very nicely in a larger military transformation policy that further contributed to a more streamlined education and personnel policy, enabling a more agile force. But also a more agile force demanded a more flexible personnel policy: Putting the majority of the paid uniformed men through a system with average time constants cut in three, by definition result in a more flexible military force.

Further work

As the project leader was hired into the Ministry of Defence after the successful completion of the project, he soon realized that several obstacles to the successful policy would arise. The lack of suitable oversight over the (lack of) need/supply balances at various levels was perhaps the most obvious. One might argue that it was precisely the lack of such oversight that led to the virtual anarchy and rank inflation shown above in figure 1. The ability to make and compare forecasts to actual status would require adequate tools.

The system dynamics model was indeed a prototype tool that could be used for such purposes. Currently, the advantages and disadvantages of using the high-level analytic tool used here and more detailed administrative database oriented tools are being investigated.

Here the analytical community will probably lose out to the ministry staff. After all, the analysts will remain outside the ministry and it is the bureaucrats who will have to decide.

The usefulness of smart quantitatively based analysis is however clear to the ministry. Consequently, quantitatively trained analysts are now hired by the ministry to help design and implementation of analysis in the similar spirit to the present one. Sadly, trained SD professionals are in short supply these days.

Lessons learned

Sadly, much worthwhile analysis work intended to improve the world result in little improvement. The authors have nearly 50-year total experience in supporting decision making with analysis. The present work is far more successful than the average project. We believe there are several factors that have contributed to the success.

As noted in Bakken (1993; 2003), learning (and consequently change) typically requires a balance between an understanding that something is wrong with current policies, and an intuition among key players that a change will be a change for the better. Indeed a whole theory around problem “ripeness” (Pruitt, 1997) indicates that

change needs to be ripe. Often, analysis produce ripeness among the analysts. This implies a modified intuition about underlying dynamics within the intervention team (Hogarth, 2001). Decision makers' have not gone through such an intense experience, and theirs lag analysts' ripeness. Further analysis typically widens, rather than narrow, the gap between analysts and decision maker mental models.

In the present case, a critical level of ripeness existed already. The project leadership built up three independent lines of reasoning that all led to the same conclusion. The first line of reasoning was that all other defence organisations had transformed into a dual category personnel policy. The second was that without a significant mass of soldiers that could be mobilized, the need for a big cadre of permanent senior staff that could lead these masses in war-time, disappeared. The third line of reasoning was the one imbedded in the present model. The first two lines of reasoning were reflected as an uneasy feeling about current state of affairs. Indeed, the analysis affirmed the pre-existing doubts and helped actor intuition develop. However, as there was significant doubt among the players, the tools and processes did convince the doubters both that current problems would likely deteriorate if no change were initiated. Furthermore, the rather transparent model also created a comfort zone around proposed solutions.

As argued convincingly by Hogarth (2001), when choosing between the logic of analysis and intuition, decision makers choose their intuition. There are obvious evolutionary reasons why this is a good general strategy. Consequently, analysts need to tap into decision makers' intuition and change it. Either because the intuition is already moving in some (right) direction, as in the present case – or by explicitly analysing decision maker's mental models and making the change of these largely intuitive constructs. There are many ways of achieving this, but transparent models – though no panacea, certainly helps. Management flight simulators and other gaming approaches may also contribute (Bakken, 1992; 2003).

A trusting “micro environment” between key players was established. This furthered confidence, but not enough to win over the trade unions. - We were indeed quite lucky that there existed a critical mass of other people with sufficient strong intuition that the present state contained something fishy...

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