

A Managed Service Report

White Paper

Outsourcing Network Operation's Centres

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1. Introducing the aims of the paper:

In this paper, I argue that in today's environment of accelerated technological changes, triggered by the gradual consolidation of the Information and the Telecom sectors, the outsourcing of Network Operation Centres (NOCs) is a viable alternative practice worth considering by the Service Providers (SP). I will attempt to provide an answer to the question '**why outsource the NOC?**'.

NOC outsourcing is an emerging trend as part of Next Generation Network (NGN) evolution and management of infrastructure, driven primarily by the economies underpinning ownership of resources and network costs. I claim that outsourced NOCs will become a standard offering in the near future.

Within the UK geographical boundaries there would now be in excess of fifty NOCs, dealing exclusively with surveillance and monitoring activities for bespoke Telco's and Internet Service Providers (ISPs). This situation has largely evolved as a result of the de-regulation of the Telecommunication's market in the UK in the mid 1980s.

One of the key questions for the Service Providers to answer is, what is the optimal model for Telco's to follow, faced with continuing market competition and rapid technological innovation? Should they invest in their own networks, including NOC facilities, in order to meet these challenges, or should they outsource some, or even all of their network capabilities?

2. The case 'for' Outsourcing:

Prior to any outsource decisions there are some factors that need careful consideration. Of paramount importance, of course, are the costs involved. Thus, I will address first the **cost of ownership**.

Since the recovery from the tech bubble burst (in 2001-2), the ownership of resources, networks and particularly of space has risen considerably, whilst the profit margins on services has steadily decreased. This is driven in some instances by regulatory rulings (as in the case of the cross-network and roaming mobile charges). New technologies, such as Voice Over Internet Protocol (VOIP) and SKYPE, have also come to the fore, thus eroding the traditionally lucrative voice markets. Both — voice and bandwidth pricing have become commoditized and new, specialist companies have sprung up to accommodate this reality.

From the above it is evident, that in the new realities the old methods are no longer competitive and economically viable. We are witnessing the appearance of new models, dealing specifically with the issue of NOC and the Network Operation's ownership. Everyday there are varieties of **new, competitive business models** entering the market.

Improved financial performance is the main reason for companies undertaking Outsourcing activities. Some of the most innovative Service Providers have realized that NOC services do not require the high octane staff to carry out mundane surveillance activities.

Nowadays, NOC services have become fundamentally simplistic in their nature: fault reporting, alarm management, performance monitoring, planned outages and others. These disciplines have matured in their evolution and are no longer a mystery. The metrics underpinning the measurement and the performance of the network elements are now well understood and established. I will return to this point later in the paper.

Owning staff¹ today has taken on a new meaning and rationale. Key resources are better deployed to deliver competitive differentiation — a vital component in the global market. Today's **consolidation** actors are marketing orientated organizations. These types of company rely on **innovation** and **smart applications** to secure strategic market positioning.

In today's rapidly changing Telecom universe, complex Convergence and bundling of services are marketed with ease. In this new Business Model, the network and NOC are simply seen as conduits for delivering 'the Services,' and thus, are no longer pre-eminent as an entity within a Service Provider.

¹ Skilled staff always come at a premium, they can even be difficult to replace through employment agencies. Creating loyalty and retaining staff, on the other hand, is even harder. As there no longer jobs for life, when the cost of living constantly rises, money is often the decisive factor for staff leaving..

3. Cultural Barriers to Outsourcing or the arguments against it:

However, traditionally, there is a strong resistance to Outsourcing practices within the Telecom industry.

Today, the Telco's and Carriers that managed to survive the 2001/2 tech bubble burst have established highly developed networks. Almost without exception, they have their own NOC facilities. These facilities are seen as the 'heart and brain' of the company. Sometimes, the NOCs are even claimed to be the competitive key differentiators because of the high quality of their services. Evidently, there are lots of emotions attached to these issues.

Is this position justifiable today? Some Telco's and Carriers are beginning to re-visit the main question: - 'Are the Network Operations central to their Business, or are they only a part of the overall working process?'

Getting an impartial view on this issue from the Network and Operation's executives is akin to asking "**turkeys to vote for Christmas.**"

Many of these people have spent years building up NOC facilities and empires. As a result, trying to deconstruct such monoliths is nearly impossible. Nevertheless, there is a deterministic reality that cannot be ignored.

4. New operational models:

For example, the shelf life of 1980's technology is nearing its end. We are now at the beginning of the shift away from these technologies and towards true NGN architectures. In one form or another, NGN is an IP infrastructure. The emergence of NGN, on the other hand, puts into a question the Operational structures currently in use.

The NGNs will require significant effort to re-train staff, to engineer like for like services and eventually carry out complex migration. Convergence is always a complex and resource intensive activity. Can the SPs do this only with their existing staff? Can the same staff do the old and new operational work simultaneously, while learning about the new technology and carrying out the prolonged migration works required? By all means, this is highly unlikely.

Another consideration to be made is that **competitive business models are constantly evolving**. The bundled packages for Voice, Mobile, Internet and IPTV are now inundating the market. Will the current NOCs be able to adapt to this multi-service environment in a cost effective manner? Usually, new commercial models call for new operational models.

Another reality is that new entrants do not have the historical cultural legacy and problems of the incumbent PTTs and SPs. Their entry-cost-bases are significantly lower in comparison with the existing SPs. Thus, the new comers are already more flexible and open to different ways of functioning. The new entrants are already embracing 'outsource networks and NOCs' as an advantageous, alternative way to do business. e.g Virgin Media.

It is very easy for incumbents and established service providers to slide into traditional ways of approaching large-scale network and service changes, namely: RFI, Vendor Selection, high Capex spend, re-training, Opex increases, migration activities and trimming down old technology equipment staff. This is quite the norm within a PTT, however, the costs are very high compared with some alternative innovative options. Further more, such large undertakings often run into delays and unforeseen costs.

There needs to be general industry recognition that using a traditional approach to networks and NOCs in all the changes required will incur mounting costs, and arguably, pose further problems and risks.

5. Why is NOC outsourcing more feasible now than ten years ago?

As mentioned earlier, Network activity has become open, transparent and much less proprietary in its nature. Here are some everyday metrics that are now easily measured. The measurements broadly fit into two camps — hard network statistics and soft customer driven metrics. Some key performance indicators (KPI's) are:

- Number of trouble tickets and mean time to restore (soft)
- Percentages of voice call connectivity , ASR % NER% (hard)
- Utilization of network % (hard)
- Dropped packets (hard)
- Time to answer call (hard)
- Trouble ticket cause analysis (soft)
- MOS - Voice quality (hard)

These are just few examples of different measurements.

International Telecommunications Union (ITU) and Internet Engineering Task Force (IETF) standards are far more evolved now. Operational Support System (OSS) tools are much more powerful and affordable than before². This means that Telco's and ISPs are able to request the inclusion of performance measurement in their Service Level Agreements with any Managed Outsource Service Supplier (MOSS). Arguably, one can go as far as suggesting that the NOC has been de-skilled. This can lead up to scenarios when more standard skill sets and 'process' orientated formats shape up the NOC's environment³.

This relative '**ease to manage**' enables the Telco's to improve their network performance, stabilize and cap their operational costs through the use of MOSS. On the other hand, it is in the interest of the independent MOSS to provide valued services, or otherwise risk losing the Business.

6. The emerging mega-utility-telecoms infrastructure:

As Telecom Service Providers evolve into information and communication technology networks, they will become, ultimately, the next 'mega-utility' sector. This will spur further innovation and create even more opportunities. The creation of the World Wide Web (www) that gave birth to so many new services is a primary example of this process. As a result of its existence, new business models have seen core activities hived off into stand-alone silos of operation within the utility sector. This paper suggests that NOC activity will follow the above narrow specialization trend.

Today, the majority of the utility services — water, gas, electricity and transport — all have their core operational activities delivered by contractors and even by subcontractors. How much longer will the Telco sector 'resist' to follow down the same pass?

Any poor working operational practises that are not cost effective and inefficient will soon be replaced by a new operational model, broadly in line with the above mentioned utilities. NOCs will not be immune from the changes and the re-alignment of the new Business models required by the Service Providers. Thus, MOSS, or Managed Network Operation Centre (MNOC) emerge as a viable and impending alternative practice.

² Outsource agreements also can transfer the risks and costs of Manufacturer support away from the SPs onto the Managed Service supplier, which is one problem less to worry about.

³ Some SPs, though, have opted for taking their NOCs and Operational support units into countries, where there are adequately skilled staff available, which is more affordable. E.g. India, South Africa, Czech Republic. This can also solve issues of loyalty and Operational sustainability.