

IP transformation and stakeholder engagement

Managing stakeholders during complex change programs

Strategic White Paper

As organizations make the move to IP, the resulting IP transformation programs introduce significant change into the business, technical, and service delivery environment. While most companies are struggling to address the challenge of these complex internal changes, the impact of complicated change programs on external stakeholders cannot be underestimated. This white paper examines how large change programs affect working relations with these external parties and discusses strategies network operators can use to address the challenges of transformation and migration.

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Introduction

Most IP transformation programs are funded and managed from within the technical network division, and they focus primarily on the technical design, deployment and migration of millions of customers across vast network geographies. This creates a very complex technical program to manage internally. However, it is ultimately the consumer, wholesale and enterprise customers who will determine whether the real business benefits of the program are realized.

Other third parties, including regulators, special services and manufacturers will also have a huge influence in determining the program's success. Many transformation programs make the mistake of focusing purely on technical delivery and ignore the very stakeholders that underpin the business drivers.

This white paper identifies the stakeholder communities engaged in complex programs of change, explores the management issues that they raise and discusses approaches to managing these groups during the transformation lifecycle.

Identifying external stakeholders

An external stakeholder can be defined as any group or organization that is not part of the operator undergoing transformation — yet has a vested interest in the outcome of the IP transformation program, including its relative impact. This impact can include financial, operational, service, technical, and regulatory consequences, depending on the stakeholder and the purpose of its relationship.

External stakeholders comprise distinct groups, driven by different needs and requiring tailored approaches in engagement. Typically these groups include:

- Wholesale operators
- Enterprise customers
- Consumers
- Regulators
- Equipment manufacturers
- Special services

Table 1 shows the key drivers for each stakeholder.

Table 1. Key stakeholder drivers

Driver	Stakeholder	Wholesale operator	Enterprise customer	Consumer	Regulator	Manufacturer	Special services
Financial		X	X	X			
Operational		X	X	X	X	X	X
Technical		X	X			X	
Service		X	X	X	X	X	X
Regulatory					X		X

This white paper examines each group in turn, identifying their unique drivers and discussing the engagement challenges.

Wholesale operators – the customer-competitor quandary

When undertaking a large transformation program, operators involve their wholesale customers in a shared, complex journey. Unless the program is managed correctly, the impact on customer services, existing sales and operations channels can significantly damage commercial and working relationships.

Therefore, wholesale customers want to be assured that current services will not be disrupted, migration will be controlled in a consistent manner and future services will be launched within agreed timescales and operating parameters. If those expectation aren't met, these customers will seek financial recompense for any disruption of service.

To maintain good relationships, the necessary exchange of information, consultation, change requests and agreements will require significant effort from operator resources that are already involved in a complex, technical program of change.

Potential problems: From a wholesale operator perspective, the change program poses a number of problems including:

- Risk to their existing service provision
- A threat to their revenue streams
- Risk to their current delivery capability
- Increased overhead for their network and customer service support
- Possible IT headaches
- Risk to their essential interconnects
- A cost overhead to management

Unique role: Wholesale operators perceive themselves as significant stakeholders, because they are uniquely positioned as both a customer and a competitor. They expect to be consulted with and informed — and to have their concerns resolved in a timely, consistent and professional manner.

As a result of this dual role, the operator initiating the transformation is highly motivated to respond to their stakeholder concerns.

Top five concerns of wholesale operators

- How much compensation will we receive for network interconnect disruption — or for losses incurred in reconfiguring our network, for example, to new points of interconnect?
- What disruption will there be to our business processes, such as billing, assurance and fulfillment, and what is the associated cost?
- Will our operations and IT interfaces change, and who will pay for these changes?
- How many resources will we need to cope with the imposed transformation period, especially during the migration?
- What is the impact on our contractual SLAs, and who will pay compensation for transformation-related issues?

Operator challenges

It is a high-risk strategy to assume that business-as-usual (BAU) functions that currently interface to wholesale operators can handle the volume and complexity of required interactions. These functions include account teams, service desks, product teams, supplier management and legal teams. So where does the wholesale customer turn to address program-level issues, and how do these teams know what information to share, how often, and where to validate the answers?

Relying upon BAU functions leads to a significant breakdown in communication, disruption to business operations, increased escalations and complaints within the program, and dissatisfied operators. In the worst cases, it leads to regulator intervention, and the program is halted.

Government and enterprise customers – the SLA headache

Enterprise customers typically have unique needs. Traditionally, their requirements have been met by providing custom service levels, services, support, maintenance and relationship management to each enterprise. In many cases, the return on investment has been greater than the effort required to support the customer in a unique manner.

While this approach works for both operators and their enterprise customers, several issues need to be addressed during large transformation programs.

Unique SLAs: First and foremost, enterprise customers generally have unique contracts, which include customized service-level agreements (SLAs), key performance indicators (KPIs) and penalty agreements. The unique SLAs are embedded in a diverse range of contracts, which are, in turn, incorporated within a variety of document stores, both physical and logical.

Therefore, operators must undergo a complex, resource-intensive and time-consuming review of the contract base merely to assess the risk exposure they face during a period of transformation — for example, if they break services and incur the resulting SLA payments. Very few transformation programs have the resources, time, or investment included in their business case to calculate this risk exposure, and this is a significant problem. So, before dealing with enterprise customers, the risk exposure per customer must be understood.

Communication: The customized approach to managing large enterprise customers creates sales and account-management channels that are as diverse and varied as the customer base. The operator must harness these channels to communicate in a consistent manner. Again, this requires time, effort and cost to resolve and manage.

Operating models: The unique aspects of managing enterprise customers is also reflected in the business operations models of the operator. Generally, enterprises are managed through service desks that are categorized by sector, and the largest revenue-generating customers or specialist government departments, such as Department of Defense, have unique service desks. Often, these service desks have grown organically, and they are separated both geographically by business process and technology. As a result, considerable effort is required to engage the whole customer base during transitional periods like migration.

Top five concerns of enterprise customers

- How will the change affect our current services and SLAs?
- What level of business disruption is planned and when?
- How far in advance will our enterprise be informed about service breaks, and how will this be communicated?
- What process will be used for managing migration around our unique business needs?
- How can we claim compensation for business disruption?

Summary of operator challenges

To reduce risk during a change program, enterprises will expect the same level of consultation, expediency and attention as they customarily receive during their BAU dealings with the operator. Meeting these expectations can add significant cost and delays into network change programs, where the operator seeks to migrate as quickly as possible, by switch site or area. Often the business drivers of the change program are in direct opposition to those of the enterprise customers. If left unmanaged, these conflicting priorities will lead to regulator escalations, program delay and impaired customer relations.

Consumers – transformation for mass markets

In early-adopter programs, the impact on consumer markets has generally been passive. That is, the programs effected a change through a forced-migration approach, and consumers were not identified or treated as stakeholders.

Compared to enterprise customers, individual consumers have less financial value and consequently less ability to impact a program. However, the consumer market en masse is a stakeholder that directly impacts the direction and success of a program's outcome.

Consumer awareness: It's a mistake to assume that consumers are not informed and that migration (in a forced-migration approach) will be seamless and have no visible impact. Operators should acknowledge that technology change will have a measurable effect on service due to outages during migration. In addition, consumers are aware of any change through media coverage, both traditional and social, and improved market awareness.

Subscriber-driven programs: In migration programs that are driven by subscribers, consumers must be informed of the change program, because that's the key to engaging the consumer market and driving service fulfillment to the new network. This subscriber demand enables closure of the legacy network as quickly as possible.

Consumer information: From a technical and program-management point of view, engaging consumers is costly and time consuming. But from a marketing perspective, the program provides a golden opportunity to inform consumers of new service offerings, along with the likely impact on service during the transition period.

Keeping consumers informed encourages good customer relations and increases awareness and demand for new service offerings. Of course, based on the data provided, a percentage of the consumer base will demand further information.

Top five concerns of consumer customers

- What impact will this change have on my voice service?
- How will this change affect my broadband access; for example, will it get faster?
- How does this change affect my video services?
- What outages will I experience and when?
- Will this affect the cost of my services?

Summary of operator challenges

From a migration management and technical perspective, it may be tempting to dismiss the consumer market as a passive stakeholder. But experience has shown that doing so will have a negative effect on new service uptake and increase the risk of service calls during the migration period. Both consequences can jeopardize and even halt the program. In addition, consumer questions need to be managed and resolved in a timely manner, or it will erode customer relations and lead to unease in the consumer market.

Regulators – managing the managers

To understand the role of the regulator with regard to IP transformation programs, it is necessary to understand regulator drivers. While most countries (and regulators) have a degree of exclusivity, regulators are generally driven by similar requirements.

In general, regulators wish to encourage innovation and growth in the market. At the same time, they are charged with battling inequalities in service offerings and the competitive landscape. Therefore, the introduction of modern IP networks, particularly by major incumbents, creates a contradiction for most regulators.

The new networks can deliver new services and enhanced offerings to the customer base. But at the same time, they can bring greater levels of inequality, especially in the instances where wholesale operators and ISPs are dependent on the major incumbents for service provision.

Regulator role to date: So far, many regulators have taken a passive stance with regard to IP transformation programs. They often lay the legal framework to encourage innovation, but then allow market forces to drive the investment cases.

In the early-adopter programs, however, regulators have been drawn into the delivery phase. When resolution between an operator and external stakeholders cannot be achieved, regulators are consistently used by other stakeholders as a single point of escalation. The regulator is increasingly acting as the “referee” between new network providers and the external parties that rely on them, including consumers, wholesale operators, enterprises and government customers.

Top five concerns of regulators

- Is the program equivalent within the competitive landscape?
- Does the new technology infringe upon current service legislation?
- How can we ensure the new services and associated delivery mechanisms are applied in a fair and equitable manner?
- What new legislation is required to control the future access and services provisioning?
- What level of jurisdiction and sanction will apply if the transformed network changes the competitive landscape?

Summary of operator challenges

If agreement breaks down with external stakeholders, or if the IP transformation program seeks to change the competitive landscape dramatically in favor of the provider, the regulator has the power to intervene — and even halt the program. To avoid this, the operator must work effectively with the regulator (as well as the other stakeholders) throughout the program to ensure a satisfactory conclusion.

Equipment manufacturers – building for the future, fixing the past

Network equipment must interface with customer premises equipment (CPE) and user equipment generally to deliver a complete solution or end-to-end system. However, this equipment is often supplied by different manufacturers. When a CPE instance apparently fails, the network operator may not know where the fault lies, and a “finger-pointing” exercise may ensue. Accountability among the parties involved, just like their relationship, is most clearly defined at the technical interface.

There are two issues regarding changing an existing network in relation to the CPE.

- Existing CPE may have problems operating on the new network.
- CPE that is being developed must adhere to new standards.

Legacy CPE

Subtle differences in the network attributes may slightly alter the network interface. Such variance can be seen in technical attributes, such as voltage drops or lag and delay increases. Operators develop within the bounds of published standards (against their legacy network). But many manufacturers have developed CPE based on more than 20 years of experience and the requirements of current networks. Consequently, most manufacturers will work to operator standards. But they will also use additional functionality in the network, such as slightly higher voltages, if it is constantly available and stable.

Most legacy networks have been in place for more than 20 years and have well known, stable tolerances. There are consequences to this design approach. If the technical network attributes change slightly, even to within defined tolerances within published standards, an unknown amount of CPE will fail to function as designed.

Legal accountability: The legal accountability for these types of problems generally lies with the manufacturers. The financial impact will be felt by the operator’s customers, and complaints will generally be logged first with the operator. However, all three parties will suffer.

- Manufacturers may point to the operator, claiming that they changed the network.
- Operators can point to standards and claim that that the CPE was designed outside of published guidelines.
- Customers may have financial damages that they are seeking to offset.

Risks: From a financial perspective, the risk to both manufacturers and the operator are enormous, as damages from customer-related claims could total into the billions. From a marketing and branding perspective, the impact is difficult to quantify, but it still creates significant risk exposure. For example, networked traffic control systems, such as road crossings and traffic lights, could provide serious health and safety risks in the event of a failure. Or a failure in a widely used enterprise switch could have a detrimental impact on the operation of global trade markets. Brand damage could be irreparable.

New CPE

The change program is duty bound to inform equipment manufacturers of changes to standards and new service criteria before a network launch or migration.

Speed of change: The speed of migration will normally break BAU timescales, because change programs often progress faster than BAU expectations, and new services will need supporting CPE prior to the first customer migration.

Scale of change: To compound the problem, the scale and volume of CPE and associated manufacturers can be overwhelming. The U.K. alone has an estimated 34,000 different CPE variants supplied by several thousand manufacturers. The effort and costs incurred to test (and de-risk) the CPE and contact the appropriate manufacturers is huge.

Risks: From a manufacturer perspective, the change program is a risk to the current CPE portfolio, as well as a risk to the customer base. However, through the delivery of new services, the transformed network offers potential growth for new portfolio items.

The top five concerns of manufacturers

- How will the network affect my portfolio?
- Who is liable for testing the CPE?
- Who pays for testing, and where are the environments?
- Who is liable for CPE that is deemed non-compliant?
- What new CPE is required to support new services?

Addressing these concerns is critical to working effectively with manufacturers and the installed legacy CPE base.

Special services – managing emergency and critical numbers

All customers are important, but some customer groups can be deemed “critical.” These organizations provide vital services that literally mean the difference between life and death. They may also offer a critical service to society, such as the Samaritans and ChildLine in the U.K.

Special services can be categorized into two main groups:

- Emergency services include police, fire, ambulance, coast guard and other critical protection and rescue services. There are also subsets of this group, such as specialist search-and-rescue teams.
- Charity-based services include caring services, as well as utility emergency lines that address a range of interactions with the public. The issues can range from counseling people considering suicide to reporting a gas leak.

Service expectations

Both groups adhere to high standards regarding the quality of service they provide to the community. But they cannot maintain these standards if communications services are disrupted.

Communication services delivered to such organizations are bound by SLAs. For emergency response organizations, there is also a license or regulatory requirement to help ensure a consistently high level of service and availability. Consequently, satisfying the charters and regulatory KPIs is a key measure of success in any IP transformation program.

The standard risks of transforming a network are challenging enough. They become much greater, if a communication problem prevents essential rescue services from saving lives or property

Fundamental issues

Clearly, transformation programs pose a significant risk to emergency and critical services. Some fundamental issues must be resolved before operators can begin an engagement program with these parties. They include the following points:

- A clear and unequivocal definition of an emergency and critical service must be established and agreed upon. Failure to define the scope and support through governance leaves the program exposed. It may also affect how services are monitored during migration. That is, they may be closely monitored if they are deemed “critical” based on revenue, rather than their relevance to the preservation of life.
- Highly competent partners must be identified to manage the services. One likely scenario is that both the transforming operator and the wholesale operators will provide emergency services and other critical customers with service. Critical partners must be identified to enable management of the end-to-end services.
- Migration methods must allow emergency and other critical calls to be constantly monitored in any location where migration is taking place. This can involve complex checking, using signaling monitoring probes and loopback routing. Of course, these steps all add to the cost of the program.
- Service customers must be notified in advance of any service outages — including their duration — to allow planning that can mitigate the risks.
- The operator and service customers must all agree on which organizations have responsibility for mitigating the different risk scenarios associated with migrations. And this assessment must be designed into the migration program management processes.

Top five concerns of special services customers

- What risk does the program present to services we provide?
- When will the service interruptions occur and are they predictable?
- What is the process and timescale for planning to mitigate the risks?
- How can we continue to meet our regulatory and chartered obligations?
- What mitigation plans are in place to deal with service failures during the migration period, and who manages these?

Special services – other considerations

To avoid delay, these customer groups need to be aware of the plans, designs, migration schedules, and technologies well before migration begins. This approach helps ensure that activities that extend beyond the usual status are not disrupted, can continue seamlessly, and are largely invisible to either the program or the customer.

Some departments, central government organizations, and other agencies will take a proactive interest in the transformation of an operator's network. So every opportunity should be extended to respond to these communities within the overall engagement approach. While any dialogue is subject to the accepted, documented rules of engagement, every effort should be made to ensure that these engagements are well prepared and planned to avoid unexpected delays.

Managing the stakeholders

Given the diversity and complexity of the stakeholder groups, many change programs simply disengage from them — then deal with the resulting escalations through the regulator. However, this approach:

- Assumes that the program will continue through stakeholder interjection
- Hides the true cost of escalation and resolution management
- Assumes that the transformed network can be operated without the consent and buy-in of the stakeholders

The truth is that stakeholders often escalate issues to a point where regulators have no option other than to halt the program until the issues are resolved. The situation is then reactive and costly and negatively impacts the investment case.

An alternative approach: An engagement program can be established as part of the overall IP transformation program, as a way to manage various stakeholder groups through agreed channels. Although this alternative adds resource and system costs to the investment case, these costs can be offset, because this form of engagement can mitigate the risks of failure, program delays, and legal disputes.

The stakeholder program should include projects that address each stakeholder audience, as follows:

Operator engagement

The purpose of operator engagement is to work effectively with wholesale operators through the transformation program. It includes managing:

- Proactive communications programs through seminars, web-based and email FAQ, scheduled topic discussions, and status updates
- Reactive communications, such as requests for information, escalation management, and arbitration services

Ultimately, the objective is to keep the wholesale operators informed of technical and business interfaces, including their impact on the operator and operator relationship, and to report program progress.

Enterprise engagement

The purpose of enterprise engagement is to work effectively with this customer base through the transformation period. A primary goal is to minimize the impact on both the customer SLAs and the cost to the program. Enterprise engagement entails:

- A full audit of the enterprise contract base
- Calculation of risk exposure during migration
- Negotiation with the customer regarding migration (through an agreed channel-management policy)
- A resolution to allow migration against the current contract — or an exception that allows migration to the transformed network to be managed separately from the BAU approach to accommodate special contractual conditions

The project's clear objectives are to reduce exception-management costs and the risk of SLA failure, while introducing enterprise customers to the new service portfolio.

Consumer engagement

The purpose of consumer engagement is to keep consumers informed regarding the rollout schedule and the likely impact of any breaks in service, as well as to provide a service and manage requests for information. This project communicates with consumers to:

- Inform them of the change program and likely impacts
- Provide interactive data through an Internet portal to let them know migration dates
- Manage requests for information through a consumer call center

When the migration policy is commercially driven, the objective of consumer engagement is to ensure that consumers are aware of the program and offered the new service portfolio. These objectives are met with specialized, regional marketing and targeted advertising, which is channel managed to drive fulfillment toward the new portfolio at specified times.

Regulator engagement

The purpose of engaging regulators is to identify where the program will trigger negotiations between the operator and the regulator, then agree on a working process, procedures, and rules of engagement prior to those events. Proactive planning ensures that the regulator and operator are both prepared for escalations, have due process and policy in place to deal with the anticipated event, and have jointly agreed upon resolution paths.

For example, this approach pays dividends in operator interconnect negotiations. In this case, reaching agreement regarding engagement rules, policy, and payment methods with the regulator ahead of operator negotiation reduces legal and contractual timescales dramatically.

Adopting this approach can reduce the number of regulator escalations, foster a partnership approach, rather than an arbitrational relationship, and reduce the duration of any negotiating delays.

Manufacturer engagement

The purpose of manufacturer engagement is to communicate the transformation program objectives — specifically any altered network characteristics that could impact CPE operation after the migration.

Once this initial objective is accomplished, program managers work with manufacturers to identify equipment that could be affected and cooperate in defining solutions. These solutions are designed to avoid unacceptable post-migration issues and constrain the overall volume of issues to a reasonable level. This includes working with stakeholders to define solutions or action plans addressing problems that could arise with CPE after migration.

Special services engagement

The purpose of the emergency and critical engagement program is to work proactively with organizations that provide emergency life-and-death services to society. This includes:

- Making sure they are fully informed about the wider transformation program
- Notifying them about planned interruptions to service
- Mitigating the associated risks and impacts

Collaborative efforts are required between the transforming operator, wholesale operators, and the emergency and critical services groups. This focused approach can significantly reduce the potential for incidents and escalations that could impact the transformation schedule — or attract adverse publicity that could undermine brand image and customer confidence.

The wider engagement of special interest groups within government and associated agencies helps underpin a “no surprises” ethos. This level of engagement is essential if effective business continuity planning is to be maintained throughout a complex program of change.

Common interfaces, channels, systems and methods

To minimize the cost of investment involved in working with stakeholders, it's important to leverage as much business collateral as possible from the existing program. In most cases, document management systems, planning management systems, the Program Management Office (PMO), change processes and even the configuration management systems can be used for stakeholder engagement. It's also essential to take advantage of the existing channel management to external stakeholders, creating a team made up of representatives from the transformation program, BAU legal, contract management, and marketing and sales.

The cost of stakeholder engagement

For a well-defined stakeholder program, additional budget must be allocated in IP transformation business cases. This spending should be recognized as necessary in the investment case. Where possible, it should be planned for as an essential component of the program. To reduce costs, existing systems, processes and BAU resources should be leveraged. To ignore this component of the business case will only lead to higher expenses, when reacting to escalations and resolutions later on.

Stakeholders also need to recognize the inherent management cost they face. Generally, they will need to dedicate at least one full-time resource to manage the program interface and act as a single point of contact for technical, system, operations, and legal discussions. In some instances, subject matter experts will be added temporarily during the program. Clearly, the stakeholder absorbs this cost. So the program should recognize this expense and have a policy in place to deal with stakeholder discussions or claims to recover such costs.

Conclusion

As operators move from legacy networks to a modern IP-centric infrastructure, the role of the stakeholder is critical in determining the speed of rollout, the cost of the program, the ease of delivery, and ultimately, the successful migration of the customer base and realization of program benefits. Therefore, when defining IP transformation programs, the approach and associated cost of working with stakeholders should be a component of any investment case.

The transition to all-IP infrastructure moves stakeholders further up the value chain, enabling greater access to business processes once controlled by the operator (for example fulfillment, billing and assurance). Newer technologies such as software-defined networking allow for more rapid service launch and configuration, under the influence or direct control of stakeholders. Consequently, the importance of engaging stakeholders effectively increases beyond the point of migration, and it continues to rise as the service portfolio offers even more to stakeholders. Which leads to another question: "How will we work with stakeholders beyond IP transformation?"



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