



SERVICES

Operational assurance in network infrastructures.

CHANGE

Operators and Service Providers face immense technical, operational and lifecycle challenges together with the fragmentation of traditional revenue models. Manufacturers are delivering unprecedented technical advances and at the same time seeing strong price pressure. IMPEQ Services can deliver cost savings and operational improvement to both Operators and Manufacturers alike by working with all parties to focus on core business and contract levels of responsibility to specialists.

WHAT DO WE DO NOW?

A mounting number of service contracts for each of your many suppliers? Uncertain who will be at your site and when? Tired of isolating each problem before contacting vendors? Are specialist staff stretched between multiple sites? Wanting to off-load operational staff and process management? Wishing you could set operational targets and budgets and concentrate on your core business?

DID YOU KNOW...

We provide a comprehensive range of services reliant on the longstanding and wide ranging experience of our staff. This includes SLA support services, operational and fully managed services. This is complemented with an extensive in-house test & measurement capability. The fulfilment of all services is focused on the operational lifecycle to foster integrity and ensure the delivery of value.

Rob Timmermans: C.E.O



OPERATIONAL ASSURANCE IN NETWORK INFRASTRUCTURES

IMPEQ Services has for many years been driving service innovation. Service is our proposition. IMPEQ Services helps Operators and Manufacturers worldwide understand current the service challenges and what is driving them. We provide an extra capability to innovate service processes and optimize operational costs. We are able to harness the opportunity provided by change and provide continuous operational assurance.

Progressive SLAs, Life-cycle management, Network operations, Content monitoring, Verification and certification, Risk management, Hosting, Umbrella service contracts, Supply change management.

WHY IMPEQ SERVICES?

Taken as a whole, IMPEQ is a multi-vendor partner focused on maximizing the inherent value of combining excellent people with the best technology, two key elements we believe are inseparable. IMPEQ Services experts are part of a company culture that has a leading track record of planning, and building and running some of the most reliable and innovative video delivery networks in the world. IMPEQ Services uniquely offers multi-vendor service through the total life-cycle.

IMPEQ Services and IMPEQ Solutions provide the foundation for high quality system and network performance. While IMPEQ Staffing provides up-to-date

visibility in how Operators and Service Providers are changing operations and processes and what special challenges they face. Thanks to these inter-operable lines of business we provide our customers with current, tangible and executable services that is of great importance when innovating your operations.

Together with your own operational capability, we realize market leading operational and support services.



Ron Verheijen: Sr. Consultant, Dir. IMPEQ Solutions



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KEY VALUE PROPOSITIONS

- ***Experience & Expertise***
- ***Innovation***
 - Progressive SLAs
 - New multi-vendor multi-level contracts
- ***Operational continuity***
 - One provider many vendors
- ***Reduced and predictable costs***
 - Aggregated investments
 - Leverage on-site hours
 - Contract service not people
- ***Extended life-cycle***
- ***System level analysis***
- ***Reporting and performance transparency***
- ***Trust***
 - Operators
 - Manufacturers
 - Multi-dimensional Competencies
 - Operation
 - Service
 - Quality experience
- ***Core business focus***
- ***High quality***
 - Leading end user experience
 - High availability

EXPERIENCE & EXPERTISE

IMPEQ Services offer invaluable operational experience and expertise, which is continually augmented by our consultants and specialist solution designers. Trusted customer relationships, many of which have now entered their 15th year, help provide the foundation required for more innovative services. Naturally, our services span all traditional delivery segments (satellite, cable, and terrestrial) and their convergence with emerging broadband networks.

INNOVATION

Since 2003, IMPEQ has always been about technology integration and services. Moreover, IMPEQ has through the years gained a keen sense that helps determine which innovations are truly beneficial. We set out to leverage our experience and vendor relationships to provide progressive SLAs, operational and managed services that deliver clear operational value and cost advantage .

SERVICE INNOVATIONS:

Multi-vendor umbrella service contracts, Change control, Capacity planning, Asset management, Renewal programs, Radical operational improvement, Hosting of specialist services.

CONTINUITY

You contract with IMPEQ Services, a stable company instead of individual vendors. Our customers are assured of receiving not only the highest quality of services, but the assurances of a long-term partner. Familiarity and trust are key components of successful service delivery.

REDUCED AND PREDICTABLE COSTS

IMPEQ Services supports many operations world-wide and manages millions of dollars of equipment annually. By aggregating investments we are able to pass on significant cost savings to our customers. Our highly skilled staff are regularly on-site which can also be readily leveraged by manufacturers. IMPEQ Services offers predictable costs and performance because you contract our services not individual people.

EXTENDED LIFE-CYCLE

Technology advances evermore rapidly and more frequent EOL/EOS announcements mean increasing operational challenges and cost. IMPEQ Services addresses these issues with special service contract extensions that in some cases have doubled the life-cycle of the most extensive installed bases.

SYSTEM LEVEL ANALYSIS

In order to be an expert in this industry, an organization has to build experience in the technological, operations and servicing aspects of video delivery and network infrastructure. IMPEQ Services uses its multi-dimensional experience and multi-vendor relationships to address issues and operational challenges from the top level.

REPORTING AND PERFORMANCE TRANSPARENCY

IMPEQ Services has extensive experience of adopting on-going operations and transforming these into a service offering with predictable costs and performance requires. Effective monitoring and measurement of service performance is critical to the innovation of processes and drive for cost saving.

TRUST

The IMPEQ name is synonymous with high quality and dedicated service and support. Over many years we have developed partner relationships with operators and manufacturers alike based on trust. This understanding is the enabler of our unique service proposition. IMPEQ Services means continuous innovation and the highest dedication to a quality end user experience.

CORE BUSINESS FOCUS

By taking on some of your most consuming activities, and helping you streamline your operations, we can help stimulate an environment which allows you to focus on your primary activities. Your management teams are skilled in developing and monetizing the customer relationship. IMPEQ Services ensures that your managers are able to focus on their core business without distraction.

HIGH QUALITY

As a network Operator you realize, that the quality of your system is only as good as the people who stand behind it. Our solutions and services are top-tier because of our top quality people and their result focused work methodologies. Above all, we provide a service that has a sharp focus on delivering a high quality end user experience.



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SERVICE AVAILABILITY

Round the clock service availability to end-users needs specific attention. It is the combination of hardware availability and service provisioning that makes the difference. Through continuous monitoring, pro-active maintenance and 24x7 operation, IMPEQ Services creates operator grade service availability.

SERVICE INNOVATION

TECHNOLOGY: ENABLING NEW FUNCTIONALITY AND SECURING INVESTMENT

The drive for innovation is often initiated by new technology (products and features). Securing system and service availability, continuous research of new technology, development of supplier relationships, knowledge sharing, testing and validating new functionality and mapping the commercial roadmap are just a few of the activities IMPEQ Services offers to secure equipment and infrastructure investments.

MONITORING: ROUND THE CLOCK QUALITY VIEW ON VIDEO DELIVERY

Comprehensive network and service monitoring provides an accessible way to improve quality of service while moving towards targets of increased operational efficiency. IMPEQ Services offers a wide range of tooling to analyze and monitor all outputs for quality and availability. While output monitoring may improve the end-customer experience, input monitoring can be advantage in meeting contractual obligations with content suppliers.

SERVICE: SYSTEM SUPPORT, OPERATION AND SERVICE DELIVERY

Operation of the network and service delivery are the main tasks to maintain the systems. Modifications of the system, extensions, implementing customer portfolio changes and innovation are continuous activities handled by the network operation team. To enable smooth operation and recovery in case of incidents, IMPEQ Services combines process management, incident management, configuration management, change management, knowledge

management. A full set of Managed Service options are available to operate the network, this may be on-site or through a hosted network operation centre.

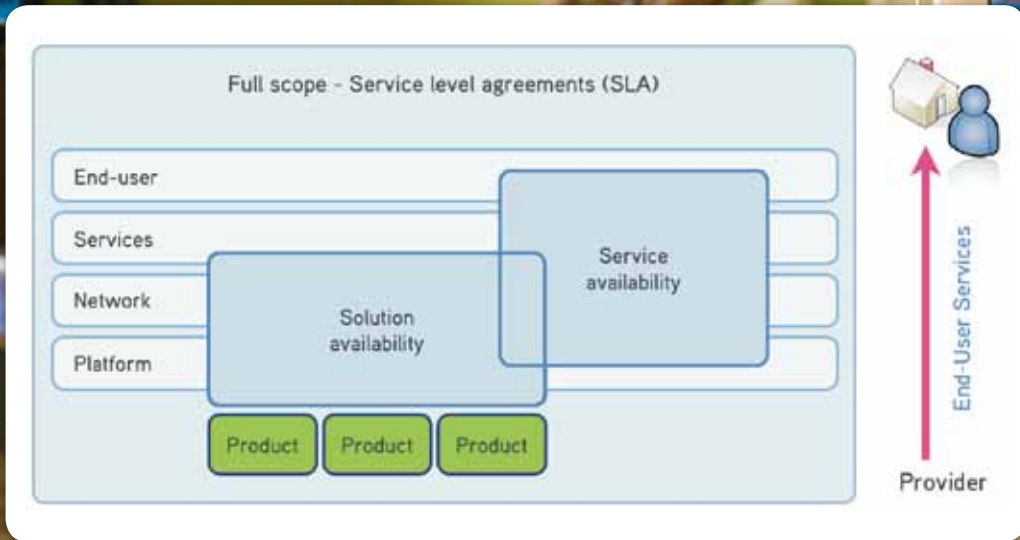
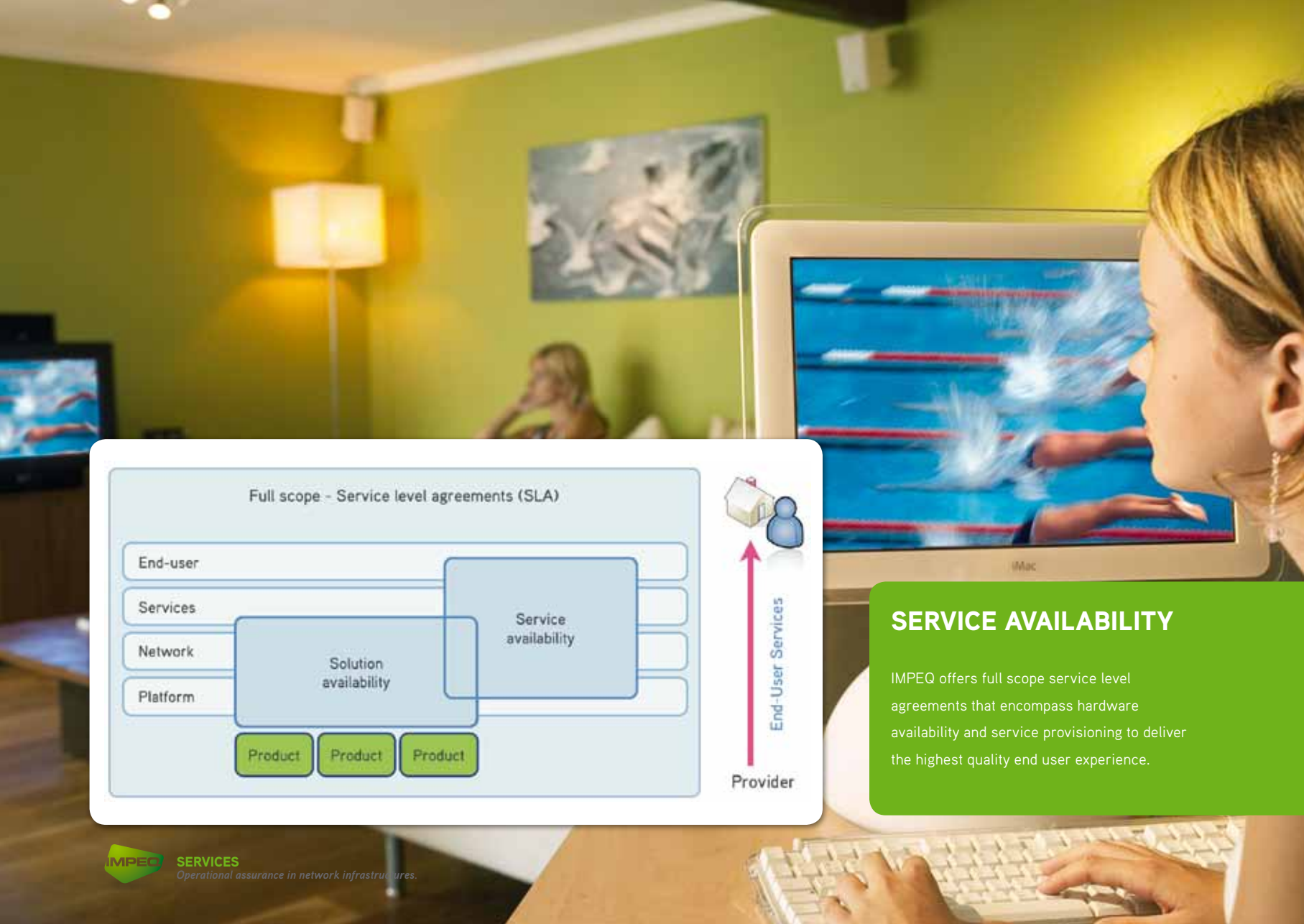
STRUCTURE: REDEFINING SERVICE RULES AND FINANCIAL MODELS

Traditional support models prescribe that a manufacturer provides a service contract for the equipment purchased by the Operator. At IMPEQ Services we believe in a better way. The service provider should be an organization that has built experience in the technological, operations and servicing aspects of video delivery and network infrastructure. An organization that can leverage experience and investments in many world-wide operations to provide progressive SLAs, operational and managed services that deliver clear operational value and cost advantage.



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SERVICE AVAILABILITY

IMPEQ offers full scope service level agreements that encompass hardware availability and service provisioning to deliver the highest quality end user experience.



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PROGRESSIVE SERVICE LEVELS

MAINTENANCE

Our service level agreements are tailor made to secure the best fit to the physical multi vendor network and the levels of end-user service quality.

We provide product availability in terms of product repair and replacement but also on-site services to assist in the field. Our specialists can assist remotely or on-site with response times of less than 4 hours. This service also includes proactive on-site health checks. IMPEQ Services approach combines the maintenance of products and configurations with the overall system function. This bridges any pitfalls between multi-vendor equipment or signal hand-over points, delivering a reliable level of service and broadcast output.

REMOTE MONITORING

Via remote management systems we are able to pro-actively analyze and monitor the services. Any degradation in the quality can be observed and reported. This will provide all the needed information to perform remote system checks and troubleshooting.

Depending on the level of quality assurance, IMPEQ Services will implement a complete set of tools to assist the network operator in performing system operation and maintenance tasks.

OPERATION

IMPEQ Services will focus fully on the operation of the systems, the implementation of new services and round the clock system and service surveillance. Combined, this secures continuity and availability, enabling operators to regain their focus on the market.

Network operators will be able to reduce operational costs by means of

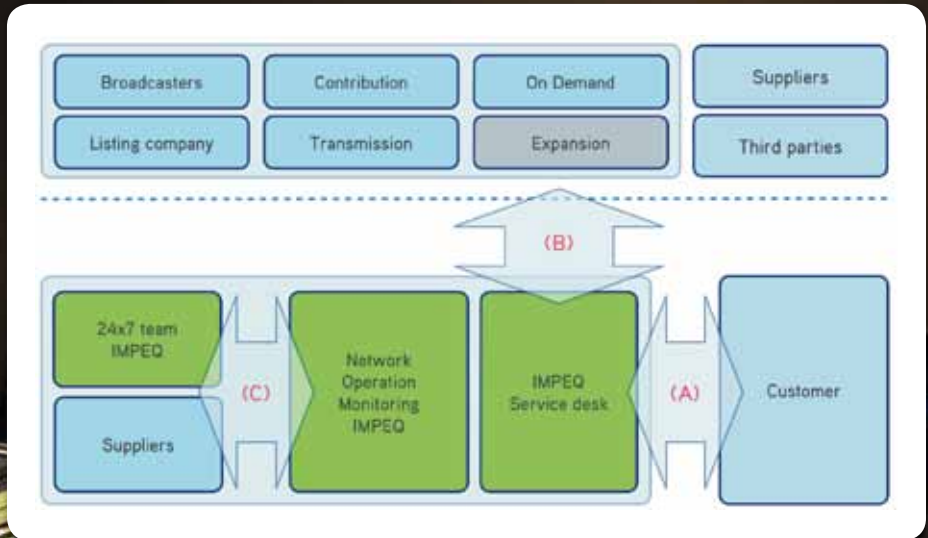
improvement programs and driving operational excellence and efficiency. By analyzing and monitoring the output, we provide reporting metrics and improve service availability. System tuning can then deliver more optimal operation and capacity utilization.

Our Managed Services portfolio provides network performance based on set indicators with a predictable financial commitment.



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SUPPORT SERVICES

FULL SUPPORT 24X7

- Around the clock support
- Multi vendor environments
- Total system fault investigation
- Rapid on-site support
- Remote monitoring
- Advanced repair programs
- On-site system health checks
- System performance reports
- Upgrade and update planning
- Extended life cycle support

MANAGED SERVICES

FULL SCOPE RESPONSIBILITY

- Includes all service products

PLUS:

- Single point of contact
- Network monitoring and operation
- Change and configuration management
- Capacity and availability management
- Performance monitoring and reporting
- Life-cycle management including asset management and renewal planning
- Complete responsibility for requirements satisfaction, performance delivery, technology management

A SINGLE POINT OF CONTACT

At the hub of all service activities IMPEQ Services provides the service desk. As the single point of contact, the IMPEQ service desk will identify and assess the ongoing events, collect the necessary data, initiate actions and manages response.

SERVICE DESK

Communication is of high importance. All involved parties have their own specific needs. The service desk will fulfill this role in reference to the identified processes, procedures and responsibilities. This is documented to ensure that strict communication protocols are followed at all times. The service desk ensures that expectations, perception and commitment are aligned.

Main service desk workflow:

- IDENTIFY
- COLLECT DATA
- INITIATE ACTION
- MANAGE RESPONSE

REPORTING

- KEY PERFORMANCE INDICATORS
- MANAGEMENT REPORTING

See (A) opposite

CALL MANAGEMENT

- INCIDENT AND CHANGE CONTROL

See (B) opposite

INCIDENT MANAGEMENT

- INCIDENT AND PROBLEM HANDLING

See (C) opposite

LIFECYCLE MANAGEMENT

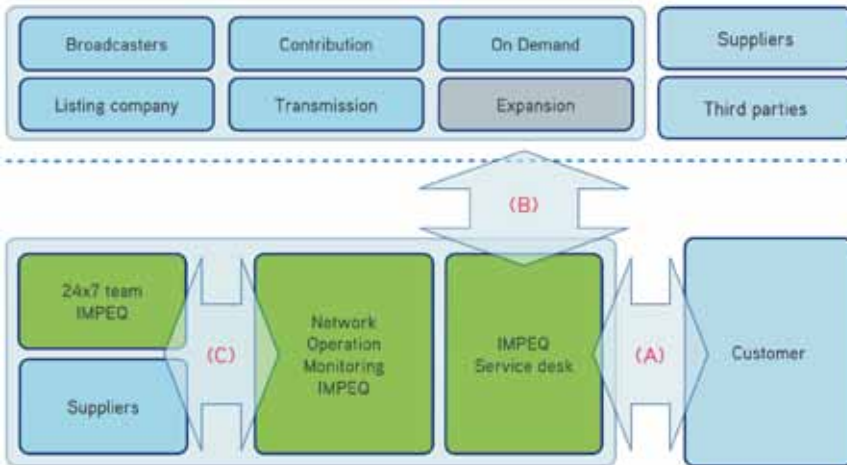
- PLATFORM AVAILABILITY AND INNOVATION

See (C) opposite



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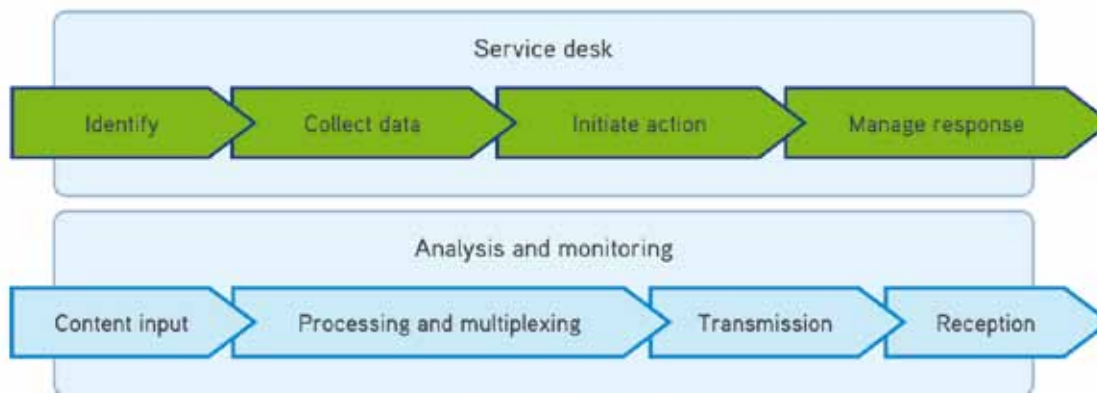
INCIDENT AND CHANGE CONTROL

There are many parties involved in providing high quality end-user services. Keeping all business partners and suppliers aligned is of high importance.

It is during incidents and when changes are required where this becomes even more critical, key to this is the timely and proper communication of the required information.

TOTAL VISIBILITY

Dedicated tooling is used to present total visibility. The IMPEQ video network management software analyses and monitors all outputs for quality and availability.



IMPEQ Services provides the tooling for monitoring all digital TV and broadcast services on 24x7 basis, throughout the processing chain. High level overviews combine with the ability to drill deep into the sub-systems, transport streams to analyse network parameters, DVB structure, signalling and MPEG information. Faults are quickly identified

and causes addressed often before the end user is aware of any degradation.

The monitoring tooling can be considered the domain of the operations centre and the analysis functions are geared towards 2nd tier or engineering staff.

Additionally, IMPEQ Services places particular emphasis on reporting mechanisms, to provide the input for the service manager and discussions surrounding the availability of services.

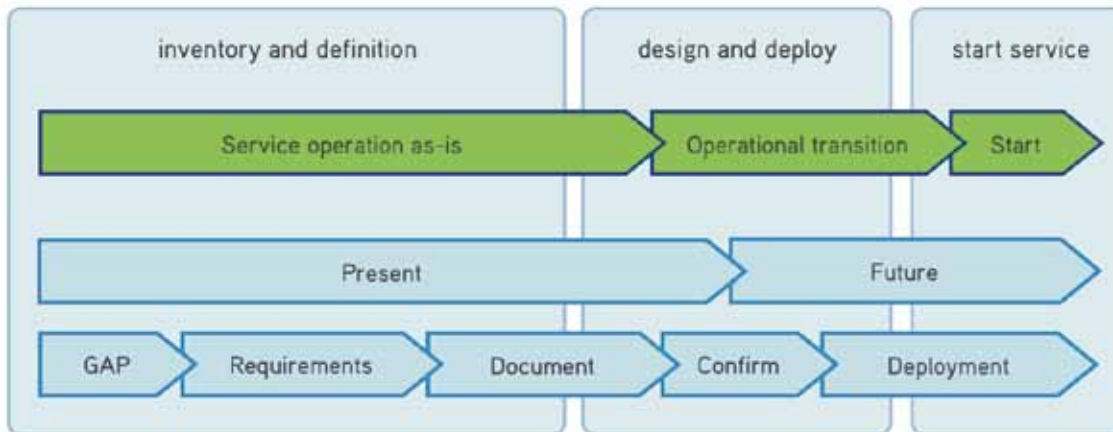


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TRANSITION INTO FULL SERVICE

When entering into a operational service agreement, all requirements need to be identified. This is always the case, when starting operation for a new platform but also during expansion or even outsourcing of the existing operation.



As the transition is of high importance, IMPEQ Services considers that this should be executed as a dedicated project. During the transition project focus remains on business continuity at all times. The operation will continue as-is to secure a smooth transition into the desired full scope of service. The operation will be a dedicated project. It will continue as-is to secure a smooth transition into the desired full scope of service.

RISK MANAGEMENT

Risk management is a major challenge faced by many Operators today when facing demands to bring change that is more diverse, quicker, and deeper than ever before. The adoption of digital broadcast systems combined with their complexity and user expectation for advanced services demands that critical systems are adequately diversified.

The definition and implementation of this diversity in a cost effective way is at the heart of the challenge.



SYSTEM AVAILABILITY

System availability in part is realised by means of system redundancy; the means to recover in case of failure needs further investment. Implementing a fully or partly redundant system on an external location is a clear and significant step; but IMPEQ Services also considers operational support needs to ensure that the redundant system is available when required.

SERVICE AVAILABILITY

Service availability is often demanded by national regulation and without exception part of third party broadcast contracts. This may include all services or the so called “emergency” channels on radio and television. IMPEQ Services is able to prioritise the services and develop operational processes in terms of levels of recovery and required time frames.

PROBABLE EVENTS

It is easy to equate Disaster recovery with low probability catastrophic events. In reality far more probable and seemingly harmless events cause operators to require a site redundant system. In recent years IMPEQ Services have seen broadcast buildings evacuated for days due to flooding, fire in a nearby building, and security incidents; not to mention events which impact on the area power supplies.

DID YOU KNOW...

When operating the digital television platform, a high quality end user experience is of paramount consideration. High quality service delivery is key in our service approach.

IMPEQ has developed a portfolio of Operational and Managed Services that enable operators to focus on what they do best: delivering high quality and innovative products to enhance the end-user experience.



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DID YOU KNOW...

IMPEQ has developed dedicated services to assist operators in the maintenance and operation of distributed systems. As a first step we can offer unified system management for operator and 3rd party hosted systems.



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SECURING SERVICES

IMPEQ has developed dedicated services to assist operators in the maintenance and operation of distributed systems. As a first step we can offer unified system management for operator and 3rd party hosted systems including for example:

- SINGLE POINT OF CONTACT
- NETWORK MONITORING AND OPERATION
- CHANGE CONTROL AND CONFIGURATION MANAGEMENT
- HARDWARE MAINTENANCE
- VERSION CONTROL
- UNIFIED PERFORMANCE MONITORING AND REPORTING
- LIFE-CYCLE MANAGEMENT INCLUDING ASSET MANAGEMENT AND RENEWAL PLANNING

Importantly with this first step, IMPEQ Services already enables the Operator to view the distributed systems as one solution and concentrate management and engineering resources accordingly.

A further step in the IMPEQ Services proposition is hosted systems. Hosting is more common for specialist and complex solutions including Conditional Access, DRM, and middleware and BSS/OSS servers . With this capability we are able to present significant CAPEX and OPEX savings to the Operator. These savings are possible at all levels:

- LOCATION AND BUILDING PREPARATION
- PREMISES SERVICES AND FACILITIES ASSURED
- FINANCIAL (MONETARY AND FISCAL) SAVINGS WITH OPTIONAL OPEX ONLY MODEL
- OPTION OF DEDICATED OR SHARED HARDWARE AND SYSTEM INFRASTRUCTURE
- MANAGED SERVICE BENEFITS OF 'SHADOW' SYSTEM, AS ABOVE

By sharing technology and resources, IMPEQ Services is able to optimize system availability that leverages significant potential economies of scale. A proposition for the challenge of Risk Management that delivers both Operational and Financial benefits.



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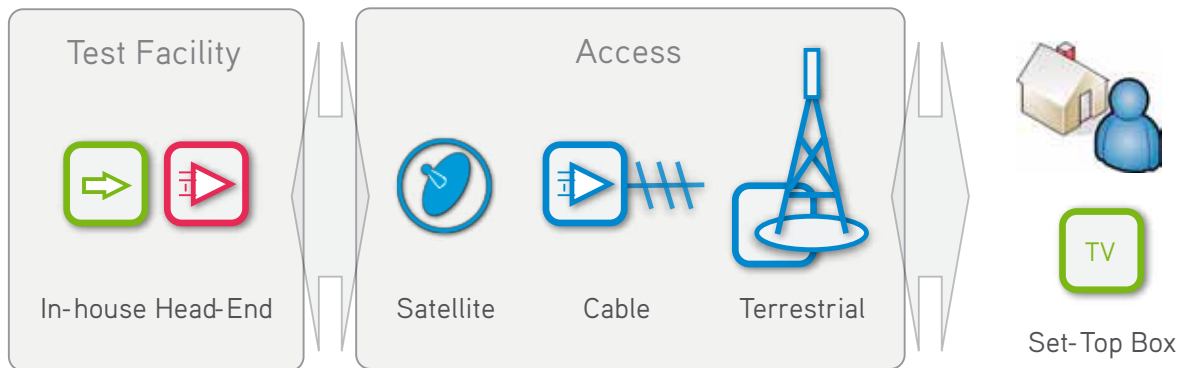
A well-designed life cycle management program has two major benefits:

IMPROVED CUSTOMER EXPERIENCE

Consistent architectural and interface designs as well as logical and expected behaviour ensure the customer has a positive experience with the set-top box or other devices.

REDUCED SUPPORT

As the device is tested against a set of clear requirements prior to introduction, many architectural or signalling issues and User Interface concerns can be identified and corrected before it is introduced. Once these issues are resolved, they will not require technical support. As would be expected, a more reliable product results in fewer help desk enquiries.



LIFE CYCLE MANAGEMENT: A SET-TOP BOX CASE STUDY

Selecting the end-user equipment including, the set-top box, can present some of the greatest challenges to your business. The investment may be overwhelming; maintenance and logistics present their own headaches. Crucially the set-top box or access device is part of your business direct and permanent interaction with the customer. It is critical in so many ways that the device performs.

When new services and hardware for a network are chosen, how is it guaranteed they will integrate effectively and efficiently within the existing infrastructure? Ultimately, a network's operation relies on the performance of the complete end-to-end connection.

The infrastructure equipment owned by the network operator usually gets selected based on a rigorous set of requirements and tests. Purchasing and Service Level Agreements with suppliers guarantee delivery, uptime, spares availability and access to high level support experts. At the other end of the network, this is hardly ever the case.

When selecting a device for a network, how can it be determined if the services will perform as expected on this new box? Will they keep performing when you change your network, add/ replace or delete services. If they don't, the loss in customer satisfaction could be significant and that will affect your business performance.

These types of interoperability and support concerns become non-issues when the devices for use in the network are in a life cycle management program. The

basis of this lifecycle management is Specify, Validate, Deliver and Phase-out. Life cycle management, in this context, is the gold standard for Digital TV receivers/decoders. The tests conducted as part of this process address stability and performance - resulting in a device that ensures customer satisfaction during its life cycle until.

By following the process there will be a controlled introduction into the market, support during the life cycle as well as the planned end to its useful life.



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GLOBAL SOLUTIONS AND SERVICES FOR VIDEO DELIVERY

ABOUT IMPEQ

EIGHT YEARS RUNNING

Since its inception in 2003, IMPEQ Technologies has become a leading provider of video solutions and services for digital television providers and network operators across the globe.

IMPEQ is a multi-vendor partner focused on maximising the inherent value of combining excellent people with the best technology, two key elements we believe are inseparable. IMPEQ's experts are part of a company culture that has a leading track record of planning, and building and running some of the most reliable and innovative video delivery networks in the world.

Customers spanning all delivery segments (satellite, cable, terrestrial and telecom) rely on IMPEQ for advice, products, solutions, integration, knowledge, validation and dedicated services, flexible talent, and operational support.

IMPEQ offers peace of mind to content providers and network operators alike throughout the operational lifecycle. Our customers enjoy new technology sooner and for longer, reduced costs and deployment risk with maximum utilisation of resources, and importantly higher end-customer satisfaction through our verification and monitoring.

Together with your own expertise, we realize market leading solutions and services.

IMPEQ is headquartered in The Netherlands with offices in the UK, India, The Philippines and Singapore. The company's customers, including many of the world's largest communications providers, deliver services in virtually every country.





REDUCED AND PREDICTABLE COSTS

IMPEQ Services supports many operations world-wide and manages millions of dollars of equipment annually. By aggregating investments we are able to pass on significant cost savings to our customers. Our highly skilled staff are regularly on-site which can also be readily leveraged by manufacturers. IMPEQ Services offers predictable costs and performance because you contract our services not individual people.



OUR PROPOSITIONS

IMPEQ Consulting uniquely offers expertise in technology through the total life-cycle. Operators recognise IMPEQ Consulting as a valuable partner in order to meet the challenge of continuous change in our industry and derive from it opportunity and growth.

IMPEQ Services provides a comprehensive range of services including: SLA support services, operational and fully managed services together with an extensive in-house test & measurement capability. We provide an extra capability to innovate service processes and optimize operational costs.

IMPEQ Solutions provides multi-vendor products and solutions for the HFC broadband, satellite, IPTV and terrestrial broadcast industry including: digital head-ends, on-demand, content protection, cable edge and access solutions, network management, and service analysis and remote monitoring.

IMPEQ Staffing's global delivery and sourcing capabilities provide our customers with the right people, skills and industry expertise to deliver technology, business process and outsourcing services with greater assurance, quality and productivity.

Thanks to these inter-operable lines of business we provide our customers with current, tangible and executable solutions and services that is of great importance when defining your future.



CONSULTING | SOLUTIONS | SERVICES | STAFFING

Global solutions and services for video delivery

CONSULTING



Expert resources enabling content delivery.

SERVICES



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SOLUTIONS



Implementing innovative video technology.

STAFFING



Sourcing & flexibility with transmission people.



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