

Guidelines for Effective 3rd Party Management on Complex Integration and IP Transformation Programs

Network operators can realize considerable Opex savings and boost their competitive position by working with a prime vendor/ integrator to perform 3rd party management when undertaking complex integration and IP transformation programs.

This paper outlines the challenges of introducing next generation technology and defines the roles and responsibilities of a prime integrator. The critical elements of 3rd party engagement and management are also defined.

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Introduction

For network operators worldwide, implementing an all-IP environment is one of the most important investment decisions they will make in a generation. It involves a fundamental business transformation that triggers significant investment in new networks and supporting systems over time.

For example, PSTN replacement projects, a key element in some transitions to all-IP networks, are already underway at a number of major operators such as KPN, BT, Telstra, Telecom New Zealand, and Deutsche Telekom. Other operators are in the early planning stages for IP transformation, making decisions now regarding common transport layers, and moving to standardized architectures and open protocols.

Over a number of years, network operators, almost without exception, have implemented networks and systems involving multiple suppliers. An important consideration is how to work with and manage a variety of suppliers while temporarily maintaining legacy technology during the move to the new world of IP.

This paper outlines a methodology for 3rd party arrangements, where one vendor has the prime integration responsibility. It also highlights the business benefits operators will realize from this methodology. The discussion is based on Alcatel-Lucent's real world experience with complex IP transformation projects.

The methodology requires effective communications to ensure that all 3rd parties know and understand the overall solution and the deliverables in order to hand over the required functionalities based on predefined timelines. To make this possible, a disciplined approach has been developed to synchronize all 3rd parties' project plans under the umbrella of the customer solution life cycle methodology (CSLC).

Confronting the Issues

According to the research firm IDC, "The next five years will be about three key issues:

- Restructuring the network to provide significant capital expenditure (CAPEX) and operating expenditure (OPEX) savings;
- Enabling the network to quickly and efficiently deliver a wealth of high-value business and consumer applications;
- Network infrastructure services portfolios coming to the fore as network equipment providers (NEPs), network service providers (NSPs), and system integrators (SIs) position services as their go-to-market lead and key competitive differentiator."¹

When considering an IP transformation, dealing with multiple suppliers and technologies may seem an insurmountable problem for network operators. The apparent complexity of managing both legacy and IP vendors as well as existing and new technologies, creates a degree of exposure often not previously experienced by operators.

Some of the potential issues the operator will need to address include the following:

- **Working across "silos" that support legacy services** – Over time, as operators introduced various best-of-breed technologies to the network, so-called "silos," "stovepipes," and "mediation" layers appeared. This exacerbates the complexity and cost of systems

¹ "Worldwide Telecommunications Infrastructure — Top 10 Predictions", IDC, January 2007

integration, new service introduction, and forwards/backwards compatibility. Therefore, a big issue for operators is ensuring the most cost effective and flexible use of a legacy network, while embarking on a new network and IP transformation.

- **Accounting for terms and restrictions of existing arrangements** – Some operators may face complicated and long-standing commercial arrangements with existing suppliers, which may inhibit the fundamental business transformation brought about by IP. The costs associated with changing suppliers may be significant if existing technology has not reached its full lifecycle or if commercial arrangements contain exit penalties. These penalties can take a variety of forms ranging from the loss of discounts for new purchases to more expensive support and maintenance arrangements.
- **Leveraging the installed base** – Some OSS/BSS systems may have developed over time with bespoke and proprietary elements. The operator may need to purchase and install completely new systems to enable full IP service offerings to customers. The problem is how to make the best use of the installed base of supporting systems while evaluating new systems and potential suppliers. Favorable arrangements with current and potential suppliers will be key in managing this transition.
- **Preparing for a smooth introduction of new solutions and technologies** – Introducing an all IP environment is an ambitious undertaking. It entails contacting a large number of new vendors and dealing with product life cycles in various stages of maturity. All these vendor products, must be included in a holistic approach that includes alignment of design, building proof of concept, release management, and implementation.

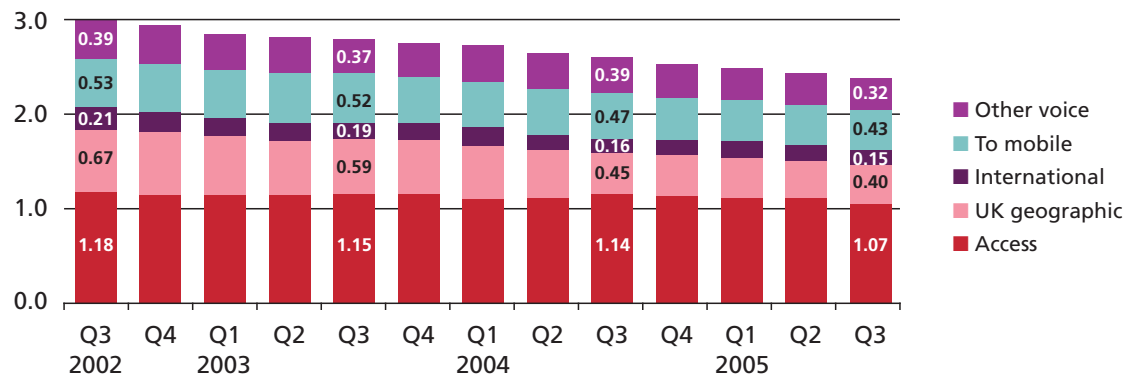
IP Transformation: A Compelling Issue

According to Gartner Dataquest, “As more IP transformation projects launch, their inherent complexity will steer carriers towards closer ties with fewer vendors. It is happening already...and those vendors will play a more active role in planning and building networks.”²

However, this potential problem, which will vary in degree from one operator to the next, is offset by the competitive advantages associated with IP technology.

Operators’ traditional revenue sources from access and calling are still responsible in many cases for more than 50% of gross revenues. However these sources are under intense price and margin pressures as indicated in Figure 1.

Revenues (£bn)



Source: Ofcom/operators

Note: “Other voice” includes all other calls made from a fixed line except dial-up internet e.g. calls to directory enquiries, premium rate services and other special local and national rate calls.t

Figure 1: Fixed voice telecom revenues

2 “Telecom New Zealand Pioneers a New Kind of Carrier-Vendor Business Model,” Gartner Dataquest, September 2006

IP involves both opportunities and challenges for operators. Opportunities include new services and revenue streams from advanced content, broadcasting, triple play, and interactive services, culminating in the operator's transformation into a "new media" company. The challenges arise because the operator is embracing a new business model. The result is that alternative providers, such as ISP's, VOIP niche players, cable companies, and Internet search companies like Google, are now serious competitors. And the intensity and variety of competition that the incumbent operators face will only increase over time.

| Low return (RoA, RoI) due to 'legacy' & 'proprietary' infrastructure. Limited innovation capacity due to network silos & heavy processes/IT. | | | | |
|---|------------------------|--------|------------------|-------------------|
| | Market Cap/ Revenue | EV/PPE | OPEX/ Revenue | CAPEX/ Revenue |
| Traditional telecom service providers | <3% | <5% | >62% | >18% |
| New market players (Google, Yahoo, eBay,...) | >8% | >53% | <47% | <10% |

RoA = Return on Assets; RoI = Return on Investment
EV = Enterprise Value; PPE = Property, Plant, Equipment

Source: Yankee Group, Alcatel-Lucent

Figure 2: Challenges facing operators

Operators should consider IP transformation now while they still enjoy a large incumbent customer base and relatively good economies of scale and scope. Starting a transformation from this position poses fewer difficulties than doing so from a position of stasis or decline.

Because of the rapid ascendancy of IP, doing nothing is simply not an option.

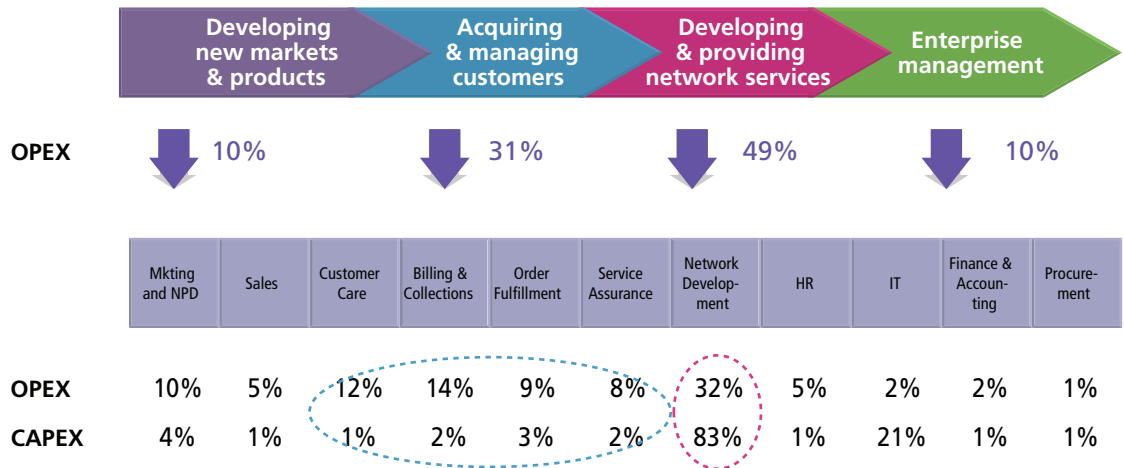
Consider the following factors:

- **Long-term commitment** – A transformation takes time to plan and implement. IP transformation projects typically cover a number of years of investment and technology change – in KPN's case, for example, more than five years. The longer the delay in beginning the process, the greater the risk of having to speed up the transformation which can result in having to deal with less quantified technology choices, unnecessary and costly rework, lack of appropriate resources, and general crisis management.
- **Coping with competitors** – Competitors will not wait – the operator's customer base is a prime target for both existing competitors and new entries into the field. Without a comparable, competitive service portfolio, incumbent operators may face rapid customer churn, resulting in costly customer acquisition and marketing costs later on.
- **Avoiding the big bang** – By planning their IP transformation as soon as possible, service providers can ensure an incremental and seamless introduction of new technologies and services, rather than having to take a "big bang" approach in order to respond to market conditions or competitive crisis.
- **Involving IT** – Transformation is as much an IT concern as it is a network issue. For example, pricing schemes for IP services are more varied and complex than traditional PSTN schemes. Billing systems will need major changes, if not complete replacement over time. Early planning for a transformation reduces the risk of a costly disconnect between the network infrastructure and critical business processes.

To successfully deal with an IP transformation, including its impact on corporate processes, 3rd party vendor arrangements should be considered as a discrete element within an IP transformation project.

Managing 3rd Party Suppliers

Working effectively with 3rd party suppliers can result in considerable Opex savings for operators. Rationalization of systems and platforms, moving from silos to horizontal and adaptable systems, and reducing complexity can all generate significant savings. According to the analysis below, operators spend 31% of total Opex on acquiring and managing customers and 49% on developing and providing network services.



Notes: *Global spending breakouts are an average of Europe, AsiaPacific and U.S. wireline carriers, and were derived from U.S. benchmarks using total cost of goods sold (COGS) and Sales, general & administrative (SG&A). ** CAPEX breakouts are based on U.S. benchmark only.

Source: Global service provider annual and quarterly reports, FCC ARMIS Database; IBM Institute for Business Value analysis.

Figure 3: Operator spending

Telstra, as part of its “Titan” IP project, intends to reduce the number of network platforms by 60% over three years and the number of OSS/BSS systems by 75% over the same period.³ Greater scale from fewer systems means demonstrable financial benefits. Telstra’s OSS/BSS consolidation is expected to generate AUD 270 million in savings.

For operators to realize the potential gains from such rationalization, effective project management is imperative. One very successful approach is to appoint a single vendor as the prime partner and integrator. This 3rd party relationship provides the operator with a single point of accountability, which helps ensure the success of the IP transformation project. It also allows the operator to free up resources to develop and market new services to its customers.

Plan of Record (POR) and 3rd Party Management

The 3rd party prime vendor/integrator (referred to as the prime vendor from this point on) for IP transformation, should implement a comprehensive and tested methodology for working with and/or managing other 3rd party suppliers.

First the prime vendor develops a Plan of Record (POR). The objective of the POR is to define an incremental set of professional services packages that are:

- **Complete** – The packages generically cover the full range of professional services likely to arise under either a turnkey project or partnership. However, customization may be required based on the specific scope and technologies involved in each engagement.

³ Ray Le Maistre “Telstra Outlines Massive OSS Project”, Light Reading, 19 July 2006.”, Light Reading, 19 July 2006.

- **Separable** – Each package has well-defined deliverables and has the potential to be contracted separately from other packages.

The POR summarizes all findings, definitions, agreements, etc. during customer solution life cycle decision reviews. The POR also has a dedicated “chapter” for 3rd party arrangements, as shown in Figure 4.

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Figure 4: POR chapter for 3rd party arrangements

The POR describes the business transformation program that helps service providers make vital, large scale changes in the way they do business. At the core are three interrelated strategic programs based on the prime vendor’s experience with broadband, best-of-breed product portfolios, and professional integration-services for large reference accounts. Together, these programs constitute a disciplined approach to IP transformation covering:

- **Service** – Methodology based on worldwide best practices for service strategies and on business-level discussions to evaluate the need for transformation.
- **Network** – Strategic technology, architecture, and implementation plan to gracefully transition access, aggregation, routing, and transport networks to an all IP infrastructure.
- **Operations** – Holistic approach to ensure effective design, migration, and integration of essential business and customer support systems.

Specifically, 3rd party arrangements in the POR use a four-tiered approach that includes development of a solutions design book, creation of the scope of work, definition of commercial terms and conditions, and definition of the monitoring and measuring approach.

SOLUTIONS DESIGN BOOK

The solutions design book captures the high-level design specification and requirements for the overall transformation solution. It shows, at the design level, where 3rd party products fit in the overall solution and how the prime vendor proposes to integrate those products to create and warrant an end-to-end network.

The solutions design book, once accepted, forms the basis for the more detailed work, which is described in a scope of work.

SCOPE OF WORK (SOW)

The SOW is a detailed document that defines:

- Specific deliverables in the program, including those attributable to 3rd party suppliers,
- Detailed roles and responsibilities of the prime vendor, other 3rd parties, and the telco customer,
- Key milestones, costs, timings, quality specifications, and prerequisites for all elements within the program,
- Governance arrangements for the program, showing interfaces between the prime vendor, 3rd parties, and the telco customer,
- Where appropriate, details of the Program Management Office (PMO),
- Technical and performance specifications and requirements for each product deployed and integrated in the program, including those attributable to 3rd party suppliers,
- Acceptance criteria for products within the program and for the program itself,
- Change control procedures, including those applicable to 3rd party suppliers,
- Ongoing operations, post acceptance, and support of the solution, including 3rd party arrangements and deliverables.

COMMERCIAL TERMS AND CONDITIONS AND ENGAGEMENT MODEL

The prime vendor should be highly experienced in working with multi-vendor environments in order to deliver fully integrated IP networks to the operator's customers. Three different models are commonly applied including:

- **Prime integrator and contractor** – When the prime vendor enters into contracts with 3rd party suppliers on behalf of the customer, a rigorous process is used for evaluation, selection and management of the implementation.
- **Prime integrator** – When the customer holds the contractual relationship with 3rd party suppliers, the prime vendor works in a slightly more complex matrix in which the customer shares a number of responsibilities. The division of responsibilities needs to be precisely articulated in the partnering agreement.
- **Any combination of the above** – In many engagements, domains may be addressed at various points in the timeline and new circumstances may dictate a change in the model that is chosen.

The POR and Customer Solution Life Cycle (CSLC) apply to all three models.

MONITOR AND MEASURE

The appointment of a dedicated prime vendor, as part of the overall program organization, is highly recommended. This will ensure that 3rd party arrangements are not treated as an afterthought and that the operator can interact with one point of accountability. Although the extent of the 3rd party manager's role will depend on the engagement model used by the network operator, this role is essential in bringing a multi-vendor environment together.

For each of the projects, a 3rd party performance dashboard is implemented defining clear and quantitative elements for use in performance review discussions. The performance parameters are agreed upon upfront in the SOW.

A dedicated workflow environment needs to be implemented. The workflow environment drives the process and supports the prime vendor all the way from the initial signing of the NDA (non disclosure agreement), through the MOU (memo of understanding) and the development of the SOW, to delivery and support. This environment makes sure each step of the process is followed, and the applicable contract types and templates are used from a repository that has been created over time based on previous complex project engagements. This repository helps to speed up the process through the use of proven base materials.

Customer Solution Life Cycle (CSLC) Methodology and 3rd Party Management

It is clear that a traditional out-of-the-box approach that relies on a standardized project life cycle is insufficient. The prime vendor should have developed a specific process to cope with the complexity of such projects, sometimes referred to as a customer solution life cycle (CSLC).

The basic process to manage a specific technical solution throughout its life cycle – the solution life cycle (SLC), is shown in Figure 5. This method has yielded excellent results for individual projects over time.

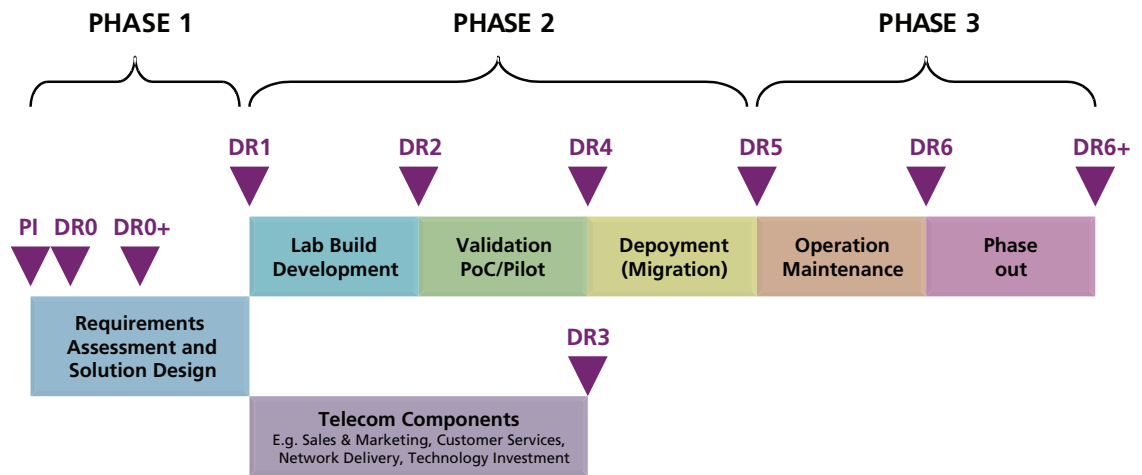


Figure 5: Solution life cycle methodology

Management of the agreed solutions throughout their lifetime is organized into three major phases, defined by decision review (DR) gates:

- Phase 1 provides an enterprise reference architectures to ensure that the right solutions are deployed and evolved so that the prime vendor can realize the best business outcomes for its customer
- Phase 2 details the steps needed to develop and deploy the solution
- Phase 3 is an operational phase that ensures that the solution continues to work over the lifetime of the program as specified in the agreed service and network performance levels

This SLC framework is applicable to all new capability solutions developed and delivered by the prime vendor. It is also implemented for all 3rd parties involved in the solution. In a complex project environment, like IP transformation, the customer solution life cycle methodology it is essential to control all interdependencies between the individual project streams – 3rd party management is an integral part of this methodology.

Third party arrangements are incorporated in the CSLC as shown in Figure 6. The process runs throughout the entire life cycle of the customer engagement and triggers actions at each and every decision gate.

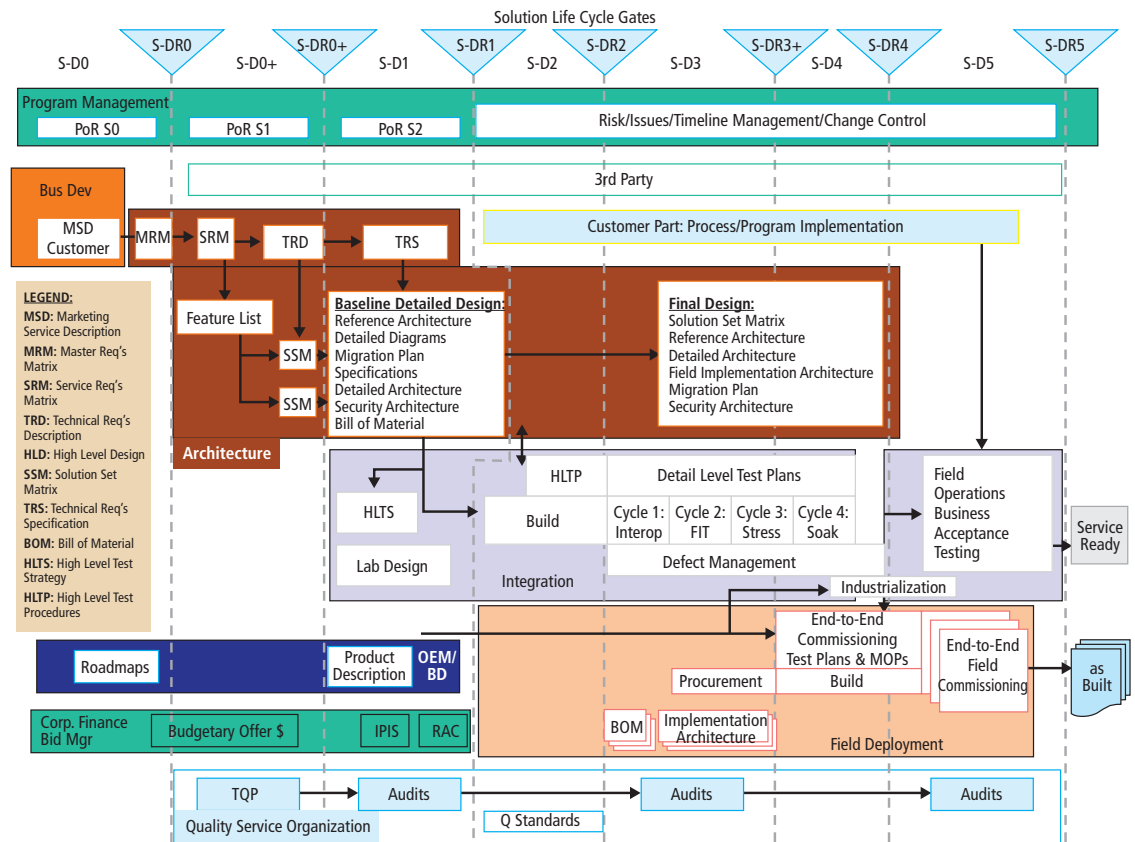


Figure 6: Solution life cycle gates

This 3rd party activity stream is a consistent thread through all stages of the CSLC process. This stream is a sub-process that needs to be carefully evaluated in the context of each of the phases of the overall process. The applicability and the results of this sub-process are an integral part of the decision review meetings (SDRx) held at the end of each stage of the CSLC process.

Benefits of Working with a 3rd Party Prime Vendor

A 3rd party prime vendor's ability to assume risk on behalf of the operator will depend on a number of factors, including the engagement model for 3rd party suppliers described above. No matter which approach is used, operators should secure, at a minimum, an accounting of the business benefits they will realize from contracting a prime vendor with responsibility for 3rd party suppliers. These benefits should be reflected in specific and quantifiable contractual undertakings with the prime vendor.

Benefits include:

- Cost effective pre-integration of 3rd party and OEM products resulting in a time-to-market advantage
- Regular price benchmarking of 3rd party products ensures competitive prices over time
- Comprehensive product roadmap and release disclosure allows early planning of new services
- Contingency plans in the event a 3rd party supplier is unable to meet requisite performance standards reduce the risk and cost of network or service disruption
- Best-in-class interoperability testing and measurement provide a high degree of confidence that the technology will work from the very first
- Best practice multi-vendor governance arrangements provide a clear statement of the roles and responsibilities of the prime vendor
- Clear, flexible and cost effective support and maintenance arrangements are provided for the entire solution, including 3rd party products
- Best practice lifecycle management arrangements that addresses all technology inputs avoids unnecessary additional network investments
- Prime vendor warranties guarantee the end-to-end performance of the network

Conclusion

IP transformation is driving fundamental change and creating challenges in the telecommunications industry. The 3rd party prime vendor/integrator's role for such transformation must account for 3rd party arrangements in a coherent and manageable way. Service providers should look for a prime vendor that has a proven methodology, extensive experience, and a track record that points up its ability to work with and manage 3rd party suppliers on behalf of operators. This approach will help operators realize major competitive advantages in today's global marketplace.

Alcatel-Lucent acts as the prime vendor integrator for a number of operators that have embarked on an IP transformation. For more information please visit: www.alcatel-lucent.com/iptransformation.

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