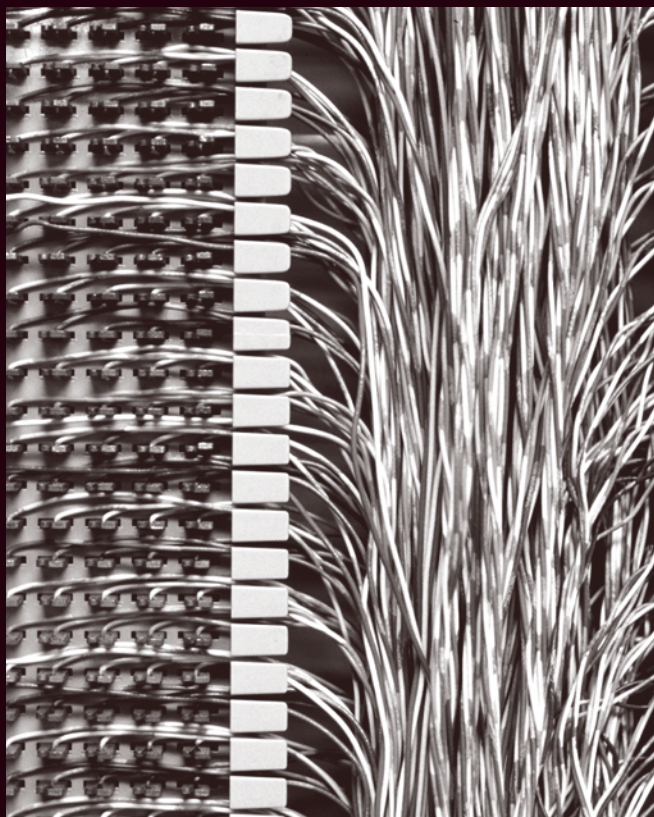




A clearer line of
communications for
telecommunications
reporting



XBRL Web services: Real-time
information for a real-time business
environment

Introduction



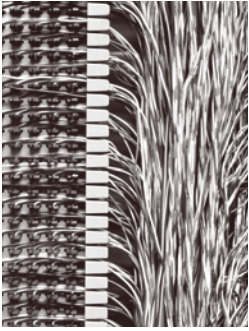
What is one of the biggest non-value-added expenses burdening telecommunications companies (telecoms) today? Meeting regulatory-compliance reporting requirements. In the midst of the 21st century information revolution — in which the telecom industry is front and centre — nearly all of its companies still consolidate business information for reporting and analysis based on the same processes they used for the last quarter of a century: searching through page after page in document after document, then “cutting and pasting” and re-keying data into a consolidated location so it can be used for analysis or reporting. Today, such manual information preparation is akin to using a dial telephone as modern office equipment. Rotary phones can do the basic job, but available services are limited.

The time has come to modernise the information-production processes used to create the hundreds and thousands of pages of telecom reporting each year. Many of the software applications telecoms already use for business-information production and consumption have the basic tools for re-engineering reporting processes: eXtensible Business Reporting Language (XBRL) and Web services standards.

XBRL and Web services enable urgently needed process changes by facilitating *automation* of the current manual gathering and consolidation tasks used for both internal and external business-information distribution. This white paper describes how XBRL and Web services benefit telecoms by enabling them to:

- Facilitate process change to increase internal and external reporting accuracy and efficiency using existing software
- Accelerate achievement of goals that systems architecture changes are designed to accomplish
- Leverage the Internet to meet increasing internal and external reporting demands using existing systems and technologies

We will also provide examples of how telecoms can leverage existing, **royalty-free** XBRL data-definition groups, called “taxonomies,” as building blocks for their own reporting, and present illustrations of how telecoms can apply XBRL and Web services to two of the industry’s pressing reporting needs. Finally, we will discuss how the increasing pace of regulatory XBRL and Web services adoption impacts telecoms.



Making the Internet the common carrier for business information

The pressure for accurate, complete and timely business information has never been greater. There are several reasons for this: recent scandals that shook market confidence in the integrity of company reporting, new reporting mandates from the Sarbanes-Oxley Act of 2002, International Financial Reporting Standards (IFRS) and the changing requirements from a host of other national and local regulatory reporting authorities.

Faced with wholesale changes to reporting requirements and increased regulatory and market demands for more information more quickly, telecoms must find ways to pull time and costs out of the reporting process and extract more readily usable, reliable information from their reporting systems. Internal information environments built on numerous layers of incompatible systems and software interferes with achieving these important goals.

Telecoms rely on networks of disparate systems to manage data. Much of the necessary data manipulation is still done manually or with rudimentary tools and manual processes. Automating and consolidating information are critical goals, but the typical route — through manual work-arounds, systems integration, and data warehousing — simply takes too long, costs too much, and does not address all the challenges.

The greater the number of systems in a company's reporting environment, the more manual work is required for every business report, particularly for flash and other periodic *ad hoc* reports. If streamlining *information* consolidation is predicated solely upon *systems* consolidation, achieving these goals can take years. With XBRL Web services, the time frame for change is accelerated and measured in *months*.

XBRL is the Internet's platform-, system- and software-independent information format for describing business-reporting data. XBRL works with Web services standards, which contain specifications for sending information securely over the Internet, internally and externally. By tagging individual pieces of information with common data definitions and providing the means of transporting data safely over the Internet, these standards, which we will call "XBRL Web services," enables disparate software applications to transmit and share information directly with each other.

Understanding how XBRL Web services accelerates this transition, turning an internal reporting environment of information silos into an information network, requires an important shift in one's conception of the challenge. The ultimate goal of technological solutions is not the installation of the technology, but what the technology is designed to achieve: *process change*. More precisely, the desired result is reduction or elimination of manual information gathering and consolidation tasks with automated information exchange from operational areas and warehouses into reporting systems.

With XBRL Web services, telecoms can realise the key benefit of faster information *re-use* from systems and sub-systems throughout a company in the near term, as opposed to attempting automation solely through systems integration and data warehousing, which is a longer-term proposition. This standards-based information sharing and exchange enables telecoms to re-engineer reporting processes by:

- Reducing information processing costs
- Re-deploying resources from low-value “data shoveling” tasks to those more meaningful to the business
- Increasing data accuracy by minimising the risk of manual transcription errors
- Preserving data integrity through a “hands off” information environment and ability to more easily trace information directly to its originating source for verification
- Promoting instant internal and external report creation at any time
- Facilitating management access to more of the information resident in company systems directly through analytical tools for better, more informed decisions
- Strengthening management controls by establishing direct information feeds from enterprise systems to monitoring tools

By providing software-, system- and platform-neutral standards that give every piece of business information an identity and context that current software and systems can process and exchange, XBRL Web services enables automation of information gathering and consolidation tasks — process change — with existing systems and in the current year, instead of years down the road.





XBRL Web services minimises
disruption of data flows.

Better ensuring information architectures meet their goals



Many telecoms plan to integrate and eliminate disparate and/or redundant information systems and centralise reporting functions into data warehouses. The goal of these new business-information architectures is to overcome roadblocks to data flow and eliminate manual information aggregation and reconciliation, including redundant data maintenance and duplicative information-preparation processes. While technology solutions can accomplish these goals, there are two primary drawbacks.

First, the consolidation process usually results in data summarisation due to the mechanical tasks required to move data, and warehousing means data becomes one or more times removed from its originating source. In both cases, data verification becomes harder at higher and higher consolidation levels.

Second, moving information from internal data stores into the warehouse and then moving it out of the warehouse for reporting, analysis and management decision-making takes incremental resources, effort and layers of special-purpose software. Therefore, today's complications in data exchange do not necessarily go away with systems consolidation and warehousing. Moreover, new complications can be introduced unless standards are applied at the *data level* sooner rather than later.

Technology architecture changes fall short of achieving process change

Systems consolidation and data warehouses offer limited potential to fulfill the broad range of reporting needs to which data applies. For example, plans to consolidate current financial-reporting systems within separate operational areas can facilitate process change within the separate areas, but does not necessarily make the data easier to consolidate for *company-wide* reporting. For that, manual data aggregation will still be needed to move information from those separate operational-area systems into the consolidated, company-wide reporting systems.

In addition, regulatory reporting is rarely a simple adjustment of existing data from operational-area systems or from one consolidated report to another. Different data points, transaction classifications and text narratives to describe procedures (which are not necessarily important for managing business operations) figure into every regulatory report. Frequently, data definitions used for third-party reporting, such as the variety of



capital-expenditure depreciation methods applicable for accounting, regulatory and tax purposes, are intrinsically unsuitable for building into the company's core data warehouses. The reason is that these definitions are not criteria managers use for decisions in running the business. In fact, while 80% of the data needed for compliance reports may come from within operational systems, the other 20% of information is manually assembled and can easily command 80% of the reporting *effort*.

The upshot is that technology-architecture re-designs do not necessarily lead to process improvement. Rather, they are likely to introduce new areas needing manual processing — a need the architecture changes were supposed to reduce. The missing element to achieve process change is a universal language for data that enables all software to “talk to” all other software. XBRL Web services enables that to happen.

The critical importance of standardised data

Managers already understand the need to standardise diverse internal business *systems* to get the benefits of a more streamlined information preparation process. By standardising business *information* itself, XBRL Web services provides a useful and cost effective way for managers to achieve process change *with the systems and software they already have*. Anyone can use the open, royalty-free XBRL Web services standards therefore, these standards can be incorporated into even proprietary software companies now use. At the same time, companies are less dependent on specific third-party vendors to maintain and adapt the data and data flows as information needs change over time.

XBRL Web services deployment enables data to be pulled directly from its source every time it is used for reporting or analysis, so data can be captured at earlier processing stages, consolidated in moments and quickly traced from any consolidation level back to its publishing source for verification purposes. Moreover, because information is tapped at its source every time it is used and changes at “upstream” sources produce updates in “downstream” reports, the information across all company reports becomes more consistent and timely.

XBRL Web services also minimises disruption of data flows as internal systems architectures change over time. The data standards can be applied to the new systems, so that the focus remains on the data definitions, queries and timely responses, not on the particular systems that are brought into or removed from the architecture.

Process change: producing and consuming higher-quality, more reliable information



Pressure on management for more reliable, higher-quality reporting comes from key third-party information constituencies, including the investment community and regulators, and from management's own information needs in the highly competitive telecom sector.

The investment community

Pressure from financial markets for fast, accurate, relevant business information is not new. However, recent, significant instances of reporting irregularities have made these demands far more aggressive — and the investment community is far quicker to penalise companies for incomplete, delayed or restated reports. Financing sources, including banks and venture capitalists, are also pressuring companies for greater transparency and accountability. Manual processes are unlikely to enable a telecom to meet these information demands and that, in turn, could affect valuations and funding costs.

The regulatory community

Deadlines for submitting regulatory reports are shortening, while the amount of required information is expanding. Telecoms also face new reporting requirements all over the world, such as from Sarbanes-Oxley and IFRS that require managers to have deeper, more current knowledge of company information than ever before. For instance, Sarbanes-Oxley requires controls disclosures. XBRL Web services enables telecom executives to demonstrably tighten the controls environment, even arranging for enterprise data to move directly into monitoring software in real time, or with only minimal delay.

The more current, more transparent picture of company operations executives gain via XBRL Web services also means executives can have more confidence in the information the company ultimately provides to third parties. This is critical, especially for reports requiring executive certifications of accuracy and completeness.

Tighter controls and greater confidence in the data underlying reports is also important for the telecom industry as a whole. Telecoms remain under the shadow of major corporate collapses centering on allegations of illegitimate accounting practices to hide losses and inflate earnings, as well as dissemination of materially false and misleading information in reports, press releases, regulatory filings and public statements. Consistent, comparable and high-quality internal reporting is essential for recognising potential problems — and correcting them — long before they impact the effectiveness of management decisions and the veracity of public reports.



The business climate

Today's fiercely competitive climate turns inefficient business reporting processes into potentially enormous liabilities by: (1) siphoning off valuable time and resources from value-added analytical activities, and (2) placing limitations on management's access and use of company information for decision making and (3) creating a high margin of error in any consolidation.

The fundamental question managers face is not whether they need to gain time to analyse, understand and communicate financial results, but *how soon* they realise the benefits of an environment that can provide them with more, better, faster information at lower cost. For many telecoms, providing managers more time to analyse information for decisions and enabling faster turnaround for reporting relies on more efficient, reliable and well-understood closing processes.

Disparate software and data definitions are a primary cause of data-flow gaps and bottlenecks that make reporting processes inefficient. One important way XBRL Web services helps telecoms achieve faster closing processes is by providing consistent data definitions which, in effect, link operational areas over existing networks without manual intervention. The company can collect and distribute information in any required presentation format for fast, efficient and accurate information sharing with any audience — management, business partners, regulators, investors, creditors or other third-party stakeholders.

The building block of process change

As with any new technology standards, deploying XBRL Web Services is easier if existing software already has the ability to recognise and process XBRL Web Services enabled data. Many of the most widely deployed business information software packages already have or soon will have built in XBRL Web services capabilities. With XBRL Web services as a “native” feature, accessible to users through menu options along with all the other, more familiar, software capabilities, it is far easier to make the transition.

Access to the tools necessary for internal XBRL Web services implementation is only an upgrade away for the most widely used business information software. Software companies already providing XBRL Web services as menu options include such popular software as PeopleSoft, Hyperion Financial Management, Microsoft Office, Microsoft Navision, Oracle Financials, SAP Financials and many others. Even now, the ability to both produce and consume XBRL Web services enabled information is fairly widespread and will become more ubiquitous going forward, as more software upgrades are released containing these capabilities.

Another major hurdle for XBRL Web services implementation has also been overcome: the actual XBRL data definitions (or “tags”) for defining business information for critical reporting needs have already been created and published. Several basic XBRL taxonomies, which are like dictionaries of data tags, are available now, or will be available in the near future. These include XBRL GL and XBRL taxonomies for U.S., Japanese, Dutch, German and International financial reporting standards. There are also several XBRL taxonomies being developed by tax authorities around the world. The territorial financial and tax reporting taxonomies (U.S. GAAP, IFRS etc.) apply at the summary data level, rather than the transaction level. XBRL GL, on the other hand, provides definitions for business information common to all data elements at the transaction level. Because of its transaction-level focus, the XBRL GL taxonomy is applicable regardless of a company’s industry or location.



The XBRL Web services capabilities within existing systems, XBRL GL, financial reporting and tax reporting taxonomies, as well as software tools that enable instant data extraction and re-use for management analysis and company reporting, all have key roles to play in the overall strategy of re-engineering reporting processes.



Case studies: XBRL Web services for telecom companies

XBRL data tags can be created and applied not only to financial data, but any business information. This means XBRL, using Web Services Internet transport technology, can create greater efficiency in operational areas that involve heavy information processing; billing is one example; non-financial regulatory reporting is another. In both of these areas, XBRL serves as the common vocabulary of business reporting that complements enterprise application integration (EAI) middleware to link disparate feeder, ledger and reporting systems.

These data definitions can be applied to any business information a company reports. XBRL definitions can work alongside the XML billing standards now in development through collaborative efforts in the telecom sector, by making these industry-specific standards more readily usable for company *reporting* as well as for billing.

XBRL, with Web services, can also streamline non-financial regulatory reporting processes. XBRL can also enhance the accuracy and integrity of financial and non-financial information exchanged between companies and their stakeholders, including regulators, business partners, creditors, investors and market financial analyst. The potential to vastly improve the quality and speed of information exchange among corporate reporting supply chain members has proven a key incentive for regulators around the world to adopt XBRL web services.

Billing

Effective billing processes, in which information is accurately driven from the ordering and provisioning data, are a competitive necessity for two compelling telecom needs:

- Reducing customer turnover
- Maximising revenues generated in compliance with an ever-expanding range of product offerings

The more accurate billing is, the greater the potential for higher customer retention and successful realization of new revenues. XBRL Web services offers two significant opportunities here for efficiencies: enhanced data interoperability (1) at the transactional level and (2) at the internal summary and aggregation level.

Entry of an order into a telecom's systems triggers a myriad of provisioning and billing-system events. Enhancing the ability of company operational areas to reliably and accurately exchange data about these events across internal as well as external systems will significantly increase the efficiencies and productivity of telecom-billing systems.

Industry agreement on data definitions for ordering events is the focus of collaborative groups. The goal of these efforts is to identify the common telecom billing data elements and agree on standardised XML to make the billing cycle more automated via information delivery platforms such as Web services. The intended result is this: Once transaction-level data are passed from ordering systems to the appropriate provisioning and billing systems, the data are captured and prepared for the processing of customer invoices.

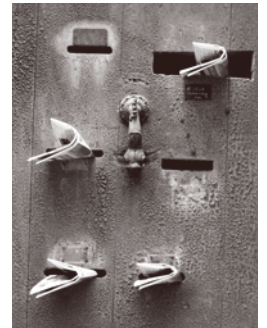
Because of the historical layering of product development criteria on outdated, even obsolete, information architectures, many telecoms are finding that processing customer invoices is currently extremely costly, and getting more so. By applying the collaboratively developed industry definitions for billing data, telecoms can reduce costs and create greater efficiencies by automating the billing process.

But process efficiency does not need to be confined to billing systems. Billing systems can also feed information directly into company reporting systems via the XBRL GL standards-based platform. This facilitates communication between operational and back-office accounting and reporting systems via an agreed representation of operational data (the Industry XML taxonomies) and accounting data (XBRL taxonomies).

The XBRL GL provides predefined data tags for elements of financial transactions, enabling companies to represent, for example:

- All parties to a transaction,
- All of the resources that are part of the transactions (such as supplies, inventory, and resources),
- All the events in this specified time period (such as when a transaction was created, sent, received, entered into the system, and key dates that assist in accounting for the transaction)

By mapping data in current systems to the XBRL GL taxonomy, either at the account level or at the detailed transaction level, each transaction can be associated with one or more reporting elements—making meaningful comparison and analysis much easier.





XBRL tags are applied to information in legacy systems within the ordering-provisioning-billing cycle. Then the information is rolled into company reporting systems, thus ensuring reporting accuracy through automated information aggregation. Moreover, this process creates an audit trail that allows managers and auditors to quickly verify information at any consolidation level, in an installation, operating unit, or a company business report.

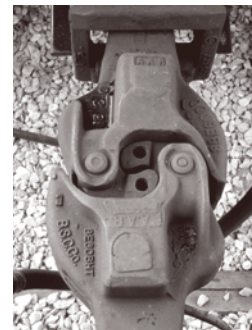
The process also reduces the cost of compliance by providing a more efficient platform for companies to communicate with regulators, creditors, and other relevant third parties. In addition, systems changes on either side of the XBRL integration point can proceed with less disruption to the information transfer cycle because the new system can understand and use the XBRL-enriched information.

Non-financial regulatory reporting

XBRL Web services can facilitate direct information sharing among systems used for non-financial regulatory reporting to national and local regulators. In many jurisdictions, regulators are requiring extensive reporting related to the performance of key functions, such as provisioning, repair and maintenance and overall service-quality levels. The various operational-support systems that create, collect or produce the transaction data underlying these reports can use XBRL Web services standards to share and report information.

Automating manual processes involved in non-financial regulatory reporting allows money and resources to be focused on more important functions (such as analysis and performance improvement efforts based on reported results) while the appropriate numbers and text moves directly into regulatory reports. This dramatically reduces the need to pull information manually from disparate sources or to extract information from various states or regions for aggregation into the reports, improving a telecom's ability to produce timely, reliable, and accurate non-financial regulatory reports.

Regulatory adoption



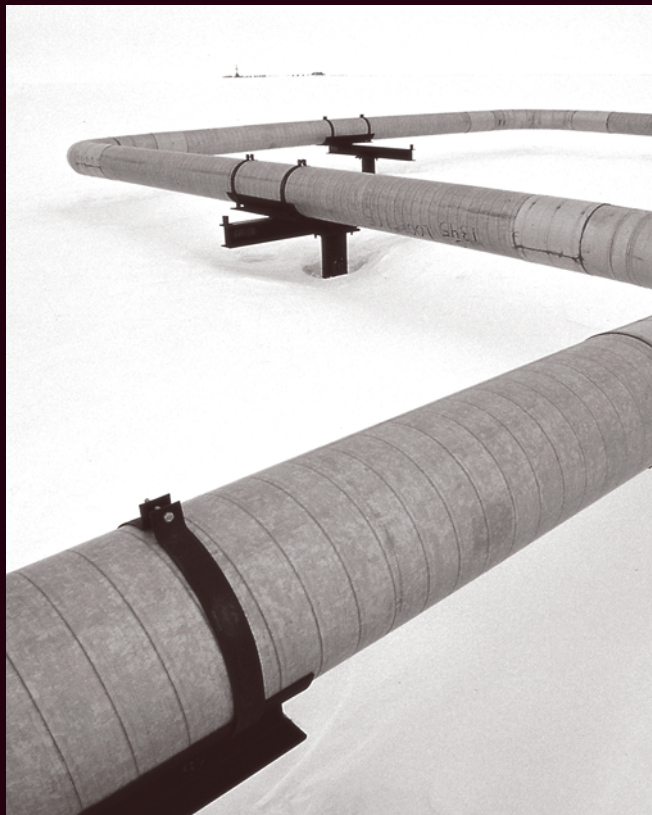
One compelling reason for telecom managers to consider internal XBRL Web services deployment, rather than a proprietary information standard, is the increasingly rapid pace of regulatory adoption. Regulators around the world have been quick to see the advantages XBRL Web services offers for easing their heavy information-processing burdens. Further, encouraging adoption of standards will facilitate better communication across their respective industry information supply chains.

A number of financial-reporting regulators have deployed XBRL Web services or are exploring its potential to lower costs, enhance performance and increase responsiveness to information constituents. In each situation, XBRL Web services is a vehicle for achieving the important e-government goals of collecting, processing and distributing data from reporting entities to audiences inside and outside the government much sooner than they can today. Examples of regulators already committed to XBRL Web services include:

- Australian Tax Office
- Autoriteit Financiële Markten (Netherlands Authority for the Financial Markets)
- Banco de Espana
- UK Inland Revenue
- UK Financial Services Authority
- U.S. Federal Financial Institutions Examination Council agencies (which include the FDIC and Federal Reserve Board)

While regulatory adoption will not usually, in itself, require reporting entities to adopt XBRL Web services, the practical implication of regulatory adoption is industry adoption. By enabling their systems with XBRL Web services, regulators will need only days to consolidate data and turn it around to other government agencies, financial institutions and the public, instead of the weeks or months or, in some cases, years it now takes. With a turnaround of just days, there is little room for companies to send regulators corrected data — reporting will need to be correct the first time. With no second chances, companies will either need to throw even more money and resources at manual tasks or make their own reporting process XBRL Web services enabled to ensure accuracy and completeness.

By moving toward the XBRL Web services open standards, regulators are both achieving their e-government goals and playing a role in facilitating standardised communication across their entire industry reporting supply chains. For the same reasons regulators are leveraging XBRL Web services, companies themselves can deploy XBRL Web services to mechanise their internal reporting environments in the near term, without reliance on wholesale systems changes, as well as anticipate the information standardisation movements of reporting supply chains.



XBRL Web services enables automation of information gathering and consolidation tasks.

Answering the call for more, better, faster information



In light of XBRL's ability to accelerate achievement of company information standardisation goals, it makes sense to place company process efficiencies and reporting needs into the hands of those who know it best: company managers. Relying on systems changes alone will not resolve the need for management to eventually step in and examine the new areas in which systems architecture will require manual processing.

Manual reporting processes cannot meet today's real-time information needs. Why should telecom managers still have to perform their analyses and make decisions based on periodic, backward-looking information contained within paper-oriented reports? In today's environment, this is no way to run a business when XBRL Web services can help to automate the reporting process to meet internal management needs and the needs of external users such as business partners, regulators and the financial markets.

XBRL enables telecom managers to:

- Identify and address delays in the current information preparation and reporting processes
- Use existing technology to alleviate pain points and enhance information availability and reliability
- Meet accelerated regulatory reporting deadlines and pressing management and third-party needs for more information in their decision processes

Relying on systems changes alone will not resolve the need for management to eventually step in and examine the new areas in which systems architecture will require manual processing. XBRL Web services moves technology into the background as an issue and places the emphasis where it should be: information and process change.

PricewaterhouseCoopers is a founding member of *XBRL International*, a consortium devoted to developing and promoting the XBRL standard. We are also at the forefront of efforts to bring XBRL into the marketplace, using our corporate-reporting experience and commercial solutions to help business-information producers and consumers re-engineer their processes to achieve greater effectiveness and efficiency. We are currently working on XBRL Web services deployments around the world.

To learn more about how you can more effectively manage your information, compliance and reporting needs please contact William Cobourn, PricewaterhouseCoopers, Telecom Industry Sector Leader at william.cobourn.jr@us.pwc.com. You can also visit our web site at www.pwc.com/xbrl.

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