

# experience success

simplify experience | harness data | stay ahead | be efficient

## When reaching “zero” is actually a good thing

How to recover revenues in the 4G/LTE era

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## IT'S DEFINITELY A DATA WORLD

There's no other word for it: mobile data usage is skyrocketing.

A leading carrier in na, for example, has reported an increase of around 5,000% in mobile data usage over the last three years. Furthermore, according to ABI Research, data usage in Western Europe and North America between 2009 to 2015 is expected to increase at a compound annual growth rate (CAGR) of 42% and 55% respectively.



## How did we get here?

The launch of the iPhone, revolutionized the user experience and significantly affected the way we consume data. The subsequent, ever-increasing range of smartphones now offered by all leading handset vendors is one of the main contributors to today's data explosion. And as more and more consumers switch to smartphones, mobile data usage will continue to grow over the coming years, especially with social media and mobile apps playing such an integral role in our everyday lives.

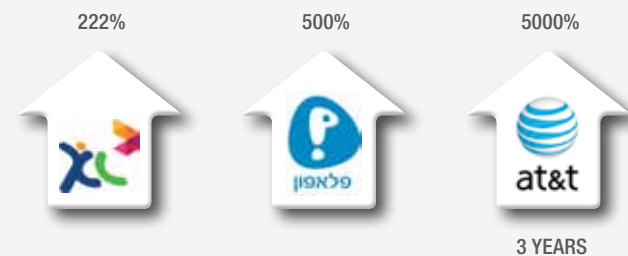


FIGURE 1: EXAMPLES OF ANNUAL GROWTH IN DATA USAGE AT SERVICE PROVIDERS WORLDWIDE

Then there's the speed aspect. Service providers have started to launch 4G wireless data networks technologies like LTE (Long Term Evolution) or WiMAX. These offer mobile users download speeds of 100 Mbps and upload speeds of 50 Mbps, bringing real top-speed mobile broadband capabilities to the market for the first time. And there are already a handful of LTE/WiMAX-capable devices available that can take advantage of these emerging 4G technologies.

## Where's the payoff from all this?

Leading telecom players in certain markets, including North America and Western Europe, expected to benefit handsomely from the surge in data use by achieving higher ARPU (average revenue per user) rates. But due to the popularity of unlimited or fixed price plans which cap revenue even as usage grows, this didn't happen. In fact, ARPU is actually being driven down as consumers and businesses become more sensitive to communication costs.

At the same time, this massive demand for data is forcing service providers to increase their network investments because today's networks are unable to handle incremental data traffic at peak hours.

What's interesting is that while service providers fight to increase ARPU and reduce churn by applying loyalty programs and adjusting their voice and data plans, they're not yet really focusing on recovering lost revenues, which is a simpler way to successfully increase revenues.

## The relationship between lost revenues and mobile data usage growth

The most frequent industry estimate shows that service providers lose around 2%-8% of their annual revenues due to legitimate charges which are never billed. Reasons for not billing a legitimate charge vary between fraudulent activities to faulty billing transactions (CDRs, EDRs and IPDRs) that are being handled by service providers' billing platforms and other BSS/OSS elements.

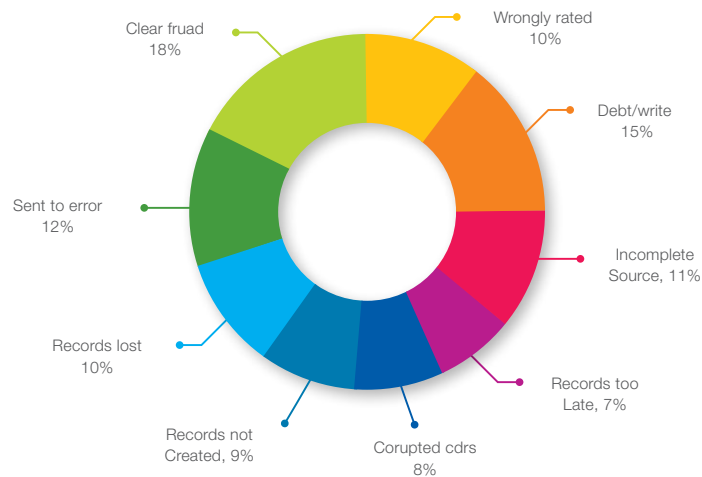


FIGURE 2: SOURCE OF ERRORS\*

\* Source: KPMG, "The drive for higher margins"

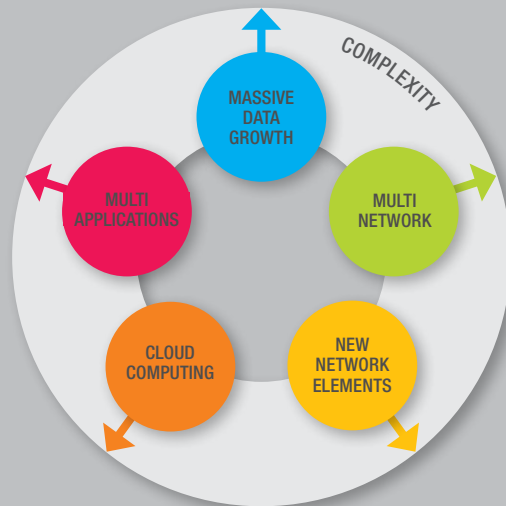
This leakage of revenues is well known to service providers, but sometimes it is not highlighted enough and taken care of. There are revenue recovery systems which, once they are correctly set up and constantly adjusted, can prevent, identify and repair revenue leakage caused by different sources. The experience shows that more than 55% of those faulty records are correctable, revenue recovery systems aim to salvage 1-4% of total billable records. This involves receiving rejected records from record processing systems, resolving them and then sending them back to the originating system. Records that cannot be resolved can then be written off and kept for future data retention.

### Keeping up with the environment

The premise of revenue recovery described above sounds simple enough. But throw a couple of new aspects into the loop and see what happens. For example, it's not about dealing with just one network anymore. A typical service provider currently manages up to four different networks at the same time, including next-generation networks like 3G, 4G/ IMS/ LTE and 2.5G legacy networks, which need to co-exist and interoperate with each other. And while service providers are constantly striving to differentiate themselves, demonstrate innovation and cut their operational costs, they must make sure that their revenue recovery systems are ready (and able) to work in a multi-network environment – especially when launching next-generation networks. As service providers deploy additional 4G-related network elements and components which become involved in the service creation and delivery process, the level of complexity increases.

Then there's broadband: as it becomes a fourth utility, a larger number of applications are generating new types of information. For example, billing transaction representing expensive rate (such as downloading a HD movie) are much more common today than they used to be three years ago.

The cloud, too, is having a growing impact. Service providers worldwide have also started offering a wide range of cloud computing services, enabling SMBs and SMEs to enjoy services like infrastructure, platform and software through a usage-based “leasing” model, without actually having to own them. The offering of cloud services affects both the network structure and usage therefore posing another degree of complexity.



**FIGURE 3: FACTORS CONTRIBUTING TO COMPLEXITY GROWTH**

Service providers need to ask themselves: Do we actually understand the effect of recent changes in network structure and usage on our lost revenue rates? If they don't comprehend the impact, and subsequently proactively take care of these factors, then they might face even higher levels of revenue loss.

The massive percentage increase in mobile data usage detailed earlier most probably means a non-linear increase in lost revenues. Why isn't it a linear increase? In reality, revenues did not grow at the same rate as network usage.

In addition, data transactions are handled differently by revenue recovery systems than voice transactions. In the case of voice, almost every user action (from initiating a call, switching to another call, to ending a call) causes a corresponding voice transaction. But in the case of data, information about actions is sometimes gathered and handled as one transaction only.

### What does the future hold?

Service providers not only now have to deal with mobile voice and data, but also to handle data transactions generated by laptop dongles, tablets and other connected devices. And these kinds of transactions will only grow over the next few years, in line with machine-to-machine technologies and an increasing variety of connected devices.

Service providers' revenue loss may rise into two-digit figures, especially during deployments of new networks/services. In the case of major service providers in North America for example, this could translate into more than several billion dollars a year.

Today, more than ever, finding ways to efficiently resolve the problem of revenue leakage by using the most advanced technologies and tools available isn't a luxury – it's a real necessity for surviving in the competitive arena and increasing the profitability throughout the revenue chain.

## Recovering revenues in a multi-network, convergent environment

Service providers know that “quick & dirty”, self-developed error-handling applications aren’t enough anymore. These solutions are, in most cases, expensive, take a long time to deploy and are usually product specific, (which might cause real issues when the time comes to upgrade or replace the product). Another problem that in-house error-handling applications commonly suffer from is the lack of unified operability tools with the existing BSS portfolio.

A better option is to use a leading vendors’ state of the art, revenue recovery systems that have been specifically designed to deal with these current and future BSS/OSS challenges. A modern revenue recovery system is characterized by several key capabilities, which are fundamental for accurate and efficient performance in the 4G/LTE era:

- A convergent error-handling solution that covers the entire BSS/OSS product portfolio, and is able to handle errors between any two transactional systems
- Ability to identify error patterns and create automated corrections that can then be applied to similar errors. For example, faulty events which reach the charging system before the SIM activation process has been completed successfully. In this case, revenue recovery systems should identify these events and send them to be rerated.
- Near real-time correction capabilities for continuously resolving errors and avoiding periodic backlogs
- Analysis and error trend detection capabilities that use sophisticated, customizable reporting and data analysis tools
- High “volume readiness” for handling massive events bulks resulting from increased usage patterns
- Ability to define advanced policy based rules via a graphical user-friendly interface
- High customization abilities via modular design tools which allow service providers to easily create new error correction flows and modify existing flows with no need for code changes
- Ability to consolidate errors from multiple systems into a centralized erred records repository
- Easy integration with third-party systems (for example, using external reference data to perform corrective actions)
- Allow efficient manual error correction for scenarios where automated correction rules are not applicable, (for example, grouping errors according to pre-defined parameters; organizing and filtering errors)
- Simplifies future expansions based on both horizontal and vertical scalability inherent capabilities

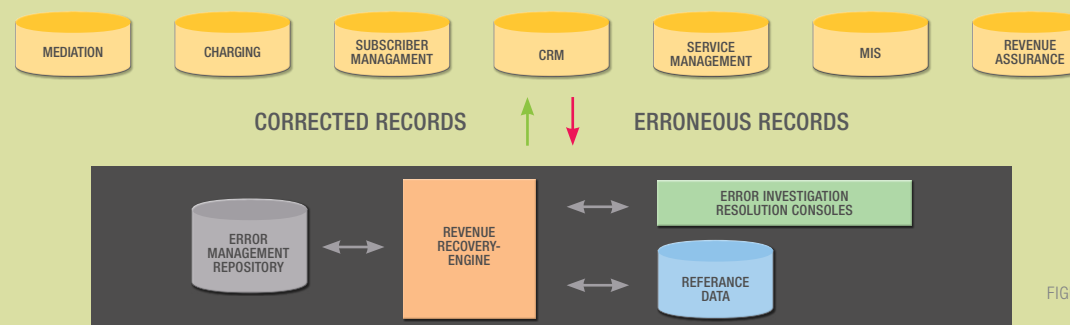


FIGURE 4: A TYPICAL REVENUE RECOVERY ARCHITECTURE



## Five points to remember

- Service providers who aren't turning their attention to 4G-ready, revenue recovery systems will continue to bleed revenues through millions of lost event records every day.
- Revenue recovery systems could already offer a quick return on investment several months from launch.
- Bringing lost revenue rates closer to zero directly increases the bottom line – it's one of the simplest ways to increase profitability.
- Revenue recovery requires relatively small effort to put into place, compared to a typical IT deployment project.
- Cover all your different networks, technologies and types of information with a converged, 4G-ready solution, capable of working with all your different BSS/OSS and third-party systems and handling massive volume of events.



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## About Amdocs

Amdocs is the market leader in customer experience systems innovation. The company combines business and operational support systems, service delivery platforms, proven services, and deep industry expertise to enable service providers and their customers to do more in the connected world. Amdocs' offerings help service providers explore new business models, differentiate through personalized customer experiences, and streamline operations. A global company with revenue of \$3 billion in fiscal 2010, Amdocs has approximately 19,000 employees and serves customers in more than 60 countries worldwide. For more information, visit Amdocs at [www.amdocs.com](http://www.amdocs.com).

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