



Primal Solutions Manages The Complexity of IP Transactions

Analyst: Anne MacFarland

Management Summary

Sometimes you come to a bend in the road where you can suddenly see a larger view of the territory ahead. Many enterprises are at such a point, and the array of competitive business models and routes to market can bewilder those used to a more closed landscape defined by the hills and tree trunks of data center architectures and device capabilities. The path to the agility needed to address these challenges, for many enterprises, is componentization, which involves making enterprise applications more transactional in nature. This change has fostered customer self-service, personalization of the presentation layer, and other qualities that build convenience and efficiency into the relationship of businesses with their customers, and more flexibility into the enterprise business model. With a transactional basis, enterprises have been able to start integrating their processes electronically with suppliers and customers, and maturing their use of portals. Portal content and connectivity has allowed customers and businesses themselves to become increasingly untethered from fixed physical locations. New businesses and business models have sprouted in seemingly unlikely places.

In such a landscape, the delivery of business process functionality over IP networks becomes a pervasively useful strategy. The challenge that delivery presents is that of managing and monetizing complex, multiple transactions over hybrid systems. A good user experience involves *all* of the resources necessary to do the needed work at a high quality. This comprises many stakeholders, all of whom must - in different ways - be compensated. Over time, an increasing number of customers will not tolerate flat fees that are a liberal wrap of expected costs. The pay-per-use alternative, attractive for various intensities of use, demands many very granular metrics of the full range of components involved. Therefore, a new level of deft, automated management is critical to providing IP services at a competitive price. IP service providers will have to capture the *all* of often extended and complex transactions, quickly understand the meaning of events, and route the events to multiple relevant software processes, culminating in billing and revenue assurance modules. This is a distinct superset of the RAS (reliability, availability, and serviceability) of the traditional data center and the connectivity metering or the traditional telecommunications carrier.

A modular, quick-to-implement solution is needed to give service providers the IP transaction management capabilities that they need to offer a service at an accurate price. It must support detailed analytics needed to grow the service provision safely and profitably, yet it must also be affordable to a start-up with fewer requirements. Primal Solutions' *IP Correlytics* is such a solution. Read on for the details.

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Scaling On Beyond ACID

Customers of IP services are not looking for handfuls of limited capability, but for broad, end-to-end support of business processes, retail opportunities, or entertainment experiences. Users don't want to have to manage the service, they want to use it or experience it fully and easily.

The IP services that can support this kind of service are a blend of transactions and connectivity. This blend is not a simple business.

- IP services, by their nature, must be able to support extensive sessions, and optional calls to multiple application components. Like the transactions involved in fulfilling an extensive holiday gift list from an on-line store with lots of switched decisions, the *atomicity*, *consistency*, *isolation*, and *durability* that characterize traditional *ACID* transactions must be maintained for many parts of the extended transaction.¹
- The jitter and latency that connectivity folks care about are also important, and will be more of a factor as the effectiveness of video becomes an essential part of more and more of what we want to do.
- The need to provide compensation for providers of content – think gaming and RSS feeds – is also an issue. It may also provide a way, via micro-payments, to balance the books for collaborative efforts.
- The need to track the settlement of debts and the aggregations of revenues is also very real, and must be an integrated part of the system.

So, the IP transaction is a hybrid handful to be managed. Managing it in pieces - as has been done in telecommunications when just connectivity was being provided - will not be sufficient. When quality of service is what is being delivered, every element that is managed separately becomes an element out of direct control and thus a potential – and hard to address – problem, particularly in the real time-frame of customer dissatisfaction.

¹ Trying to scale ACID characteristics is inconsistent with the richness of components that makes the services attractively comprehensive, and the sharing that makes connectivity services scale to tens of thousands of users.

The Lifecycle of an IP Transaction

IP Services involve multiple network providers and, often, a collection of related events, all of which underlie service quality. The lifecycle starts with provision of the service, and the content sources and networks that underlie it – but it continues through the billing to the receipt of compensation for the service provided. If this is a segmented hand-off, it is hard to model the effectiveness of the service as a whole. Events are generated from a variety of sources, not all of which use common formats of event definitions. Proactive, powerful correlation is needed to bring everything to a consistent, complete state. Proper management and correlation of the whole lifecycle is key to service provision as an auditable business service, not a loosely run extravagance.

The way to accommodate both connectivity and transaction components is to have a highly resilient element that sees all, understands all, and provisions the right metrics in the right paces to keep the books straight (see box above). Nowadays, this includes a full audit trail needed to certify compliance with government regulations and for rapid forensics when the overall service is impaired. This can be done by committees of software elements (Java *et al*), but doing the correlation in silicon can provide better real-time performance and more scalability.

The Correlitics Solution

Primal Solutions' *IP Correlitics* is an engine that gathers all the metrics relevant to these extended IP transactions in a central, transactionally consistent archive. On top of this basic engine, software "blades," called *SolutionPAKs*, provide modular service management capabilities. These include both the basics of mediation and rating, usage reporting, pricing, balance management and revenue assurance, and blades for dealing with revenue partners – something service providers will not need when they first set things up. There are specialized blades called *KpiPAKs* that report key performance indicators to managers, policy decision makers, and customer care folks. Basically, the IP Correlitics system intelli-

gently aggregates all of the metrics needed to provide services, support multiple business and pricing models, and to keep stakeholders apprised of what is going on.

At the current release, IP Correlytics supports voice, data, and content – the basics for supporting commercial IP services like VoIP. It supports customer and channel specific pricing, advanced pricing hierarchies and gives Web access for partners and third parties. Over time, Primal will add capabilities for more commercial services and for the industry-specific solutions sets of services that it expects will develop.

Because the SolutionPAKs use open-standard XML and its variants, a start-up can start with the basics, and add partner reconciliation and other capabilities as, down the road, it gets partners. IP Correlytics can also present its information to traditional business systems in a role-based, consumable form, using an API layer. This lets IP Correlytics work with existing business environments.

Outcome-Based Analytics

IP Correlytics allows decisions to be made based on what is actually happening, rather than on hypothesis. The bladed architecture gathers the metrics needed to know what services, and what qualities of service, are particularly popular. This will allow decision makers to identify areas where they can differentiate their services, as well as to identify ways to retrench gracefully, should that become necessary.

Quick to Deploy

Because of the modular nature of IP Correlytics, it can be deployed in a matter of usually four to six weeks. New startups need to hit the ground running and grow average revenue per user consistently, so they need to manage all the relationships that underlie the service in a sustainable way. They have to build in *control* from the beginning. IP Correlytics builds in the *capacity to integrate* what customers will want next year from the beginning. Supporting both control and evolution of that control is a cool trick.

Who is Using Primal Solutions?

Clients of Primal Solutions include Time Warner Cable, Lucent, and other well-known

service providers. Primal Solutions is also looking beyond the telecommunications arena. The physical dispersion of traditional enterprises poses challenges that Primal Solutions seeks to satisfy via IP transaction management.

Isolated silos of transaction information limit the ways institutions monetize use of their networks and cost their services properly. We may not think we care about monetization, but we do care about cost, and the two are inseparable. In the same way that supply chain management and the linking of inventories has removed opportunities of “shrinkage” and the need to overprice products to compensate, proper comprehensive valuation of services can allow them to be priced better.

Conclusion

In technology, *Always On* is now a common expectation. *Anywhere* is becoming more broadly supported. The imperative of *Everywhere* - that business effectiveness demands - requires IP services in some form. There is lots of buzz about Web 2.0 business models, but less said about the underpinnings needed to turn a good new idea into a sustainable business model that will scale with success. To differentiate in the provision of IP services, while still competing with the just-the-basics providers, a business has to manage both revenue and costs with accuracy, atomicity, and completeness.

The Correlytics engine is a framework that lets you develop your business as your fancy (or your customers' fancy) takes you, unconstrained by the peculiar pricing and rating schemes of the components you wish to include. With IP Correlytics to manage the underlying detail, decision makers concentrate on the business problems that all those metrics bring to light.

It is time to start thinking about IP service management. Primal Solutions' IP Correlytics is a good place to start.



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- ***The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.***

About the Author

Anne MacFarland is Director of Infrastructure Architectures and Solutions for The Clipper Group. Ms. MacFarland specializes in strategic business solutions offered by enterprise systems, software, and storage vendors, in trends in enterprise systems and networks, and in explaining these trends and the underlying technologies in simple business terms. She joined The Clipper Group after a long career in library systems, business archives, consulting, research, and freelance writing. Ms. MacFarland earned a Bachelor of Arts degree from Cornell University, where she was a College Scholar, and a Masters of Library Science from Southern Connecticut State University.

- ***Reach Anne MacFarland via e-mail at Anne.MacFarland@clipper.com or at 781-235-0085 Ext. 128. (Please dial “128” when you hear the automated attendant.)***

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