

Trading platforms

Capacity Analytics

Exploding data volumes and unpredictable market forces make effective capacity planning and management an imperative. Intrinsicly linked with attaining high performance and low latency, accurately aligned capacity is fundamental for trading competitiveness, accurate forecasting and efficiency gains. Answering this need, Sumerian's Capacity Analytics delivers insight into the capacity of front, middle and back office systems, identifying strategies for optimisation and business growth.

The challenge

Although capacity management should be viewed as one of the most important planning processes to get right, many teams find it difficult to implement a strategy that focuses adequately on the business. Common barriers often include:

- **Siloed monitoring** – that reports on individual infrastructure domains and applications, but does not provide a holistic view of end-to-end capacity that can be shared across teams.
- **Lack of connection to the business** – little or no visibility into determining the ability of the IT system to meet business volume demands.
- **Insufficient forecasting** – compounded by the above issues, forecasting becomes unreliable by relying heavily on historical utilisation, with little or no connection to business planning.

How our service works

Answering these challenges, Sumerian takes a unique approach to capacity management and its ongoing optimisation. Using our highly powerful analytics platform, we capture, model and analyse vast quantities of data generated by your trading system, establishing the business load and available headroom across the entire end-to-end service infrastructure. This business-aligned approach supplies highly precise, repeatable analysis that reveals a holistic view of your capacity against current and future trading volumes, allowing you to provision capacity precisely to demand on an ongoing basis.

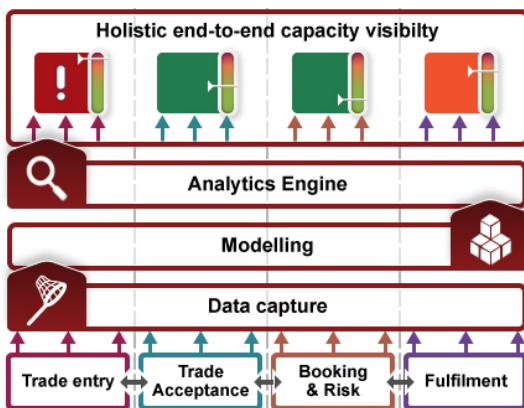


Fig.1 – Sumerian Capacity Analytics methodology

- **Holistic end-to-end capacity visibility** - supplies you with the insight to understand end-to-end capacity and how this impacts performance and latency
- **Accurate forecasting for ongoing optimisation** – actively monitors capacity, building an accurate model of application behaviour for precision forecasts and change impact decisions
- **Reduces risks and improves IT-business alignment** – by establishing a planning horizon in which to provision adequately to business needs and proving sound capacity management

Sumerian's advanced analytics correlates the demand and volume of orders, quotes and trades to IT infrastructure utilisation by calculating:

- The current level of business volumes (quotes, trades) that can be supported and the load being placed on all infrastructure components
- What headroom is available across application components within the service at the given business volumes, for example, on market feed, pricing, spread generation, FIX gateway etc
- Which of these components are acting as bottlenecks, or are over-provisioned, for example, servers, storage, network devices etc
- If there is enough capacity to support strategic business changes you are planning – new markets, instrument types etc

Armed with this insight, we can answer any number of questions surrounding your specific capacity management objectives, for example:

- *What trading volumes can we currently support and how will a 30% increase impact our available capacity?*
- *What impact will changes to the trade mix have on our available capacity?*
- *Where do we need to invest to support business growth?*

What you get

We deliver a hosted, subscription-based analytics service, requiring minimal time from you and your team to get underway – delivering our analytics in as little as 6 weeks.

Fast, secure data cleansing and integration

Using our pragmatic data collection techniques, we capture granular data from across your systems - verifying, cleansing and storing it securely in our world class data warehouse facilities. Our service can take any data, but typical data sources for capacity include:

- **Infrastructure utilisation metrics** – BMC Patrol, ProactiveNet, ITRS, TeamQuest, PerfMon, SAR,
- **Application server logs if appropriate** – WebSphere, JVM logs
- **Web server logs** - Apache, IIS
- **DB utilisation and transaction logs** – such as Oracle AWR files, Statspack output



- **Network traffic profiling and performance logs** – Packeteer, Wireshark, IP SLA, Netflow
- **Low latency monitoring logs** – Correlix, Corvil, Endace or TS-Associates

Baselines trading demand to available capacity

Using our analytics platform, we build a baseline model of your trading system, calculating the volumes of transactions being processed against available capacity, establishing the current headroom and forecasting room for growth. We examine the correlation between trading volumes and infrastructure load, quantifying at the impact of changes in volumes on the supporting infrastructure, for example:

- *Are there increases in currency pair quotes in our FX trading system – and how are they impacting capacity?*
- *How are increasing trade volumes impacting available capacity on our Equities derivatives platform?*

Key to our service is the ability to understand how volumes vary over time and what the footprint of each trading/transaction type has on the underlying infrastructure. To enable clear understanding, Sumerian uses Capacity Flowpipe visualisations to help teams across the business understand the current capacity position instantly. If any areas are close to or are breaching limits, our service will help to determine what impact this is currently having on demand and any backlog/delay in quotes and trades this is generating.

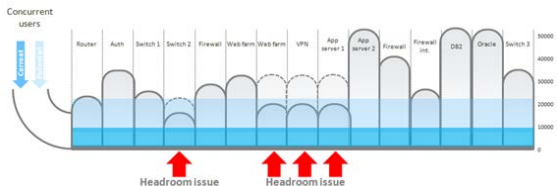


Fig.2 – Sumerian Capacity Flowpipe visualisation showing end-to-end available capacity and headroom for growth

Scenario modelling and forecasting

The baseline model offers a powerful platform for you to leverage and maximise further. Using sophisticated “what if?” scenario modelling, we can answer any number of questions around your capacity management objectives. For example, we can assess the risk, impact and cost of any rise in quote/trade volumes, architectural/infrastructure changes or adaptations to the trading mix. The advantage of scenario modelling is that it can accurately answer any number of questions that the business has around your capacity position, essentially providing a “pre-sandbox” environment in which to test out and de-risk your planning.

- *How will a switch to virtualisation/private cloud improve our capacity efficiency and costs?*
- *If we plan to grow our equities trading by 20%, what additional capacity do we need to provision and where?*
- *Are there any opportunities for us to consolidate infrastructure?*

Expert reporting – on demand, repeatable

Our analytics and recommendations are presented to you using a variety of methods depending on your requirements, from a tailored, secure Web portal to regular reporting from our data scientists. Key to our reporting is clarity, ease of use and precision - so you can make fast decisions and drive proactive, positive improvements to your trading quickly. Our service is very flexible and easy to re-align - we keep pace with your changing environment, adapting our analytics to meet your changing priorities.

The outcomes you can expect

Our services will enable your organisation to significantly advance your capacity management objectives – ensuring you deliver continually high levels of IT performance for the business.

- **Holistic end-to-end capacity visibility** - supplies you with the insight to understand end-to-end capacity and how this impacts performance/latency.
- **Accurate forecasting for ongoing optimisation** – actively monitors capacity, building an accurate model of application behaviour for precision forecasts and change impact decisions.
- **Reduces risk and improves IT-business alignment** – by establishing a planning horizon in which to provision adequately to business needs and proving sound capacity management processes.
- **Predictive scenario modelling** – enabling you to determine in advance the impact of business, application or infrastructure changes.

Intelligent analytics, smarter decisions

Our Capacity Analytics is just one of a suite of we can apply to your trading systems. Sumerian has a broad range of capabilities that may be applied to a number of your complex trading challenges.

Other analytics we can supply include:

- Batch Analytics
- Latency Analytics
- Performance Analytics
- Fill Rate Analytics
- Grid Analytics

More information

For further information on Sumerian or to arrange a demonstration of our services, contact us on 0141 229 7580, e-mail us at info@sumerian.com or visit our Web site at www.sumerian.com

