

Enabling Operational Resiliency through Infrastructure Analytics



For the infrastructure team tasked with maintaining operational excellence, the goal is to achieve the highest possible uptime and reliability rates. These rates are determined by the team's ability to detect and remediate issues quickly.

However, the teams overall success is rooted in something deeper: in the level of transparency they have into their systems. Given the increasingly complicated nature of applications and microservices, obtaining the required transparency is difficult. Fortunately, advanced analytics is helping shed light where it's needed.

What's at stake

Over Labor Day weekend in September 2019, Tesla owners were locked out of their cars after the Tesla app stopped working. Owners stormed Twitter with angry tweets and it took Tesla several hours to resolve this issue. The event impacted consumer trust in a big way.

The simple act of unlocking a car is just one example of how commonplace and important infrastructures are becoming in keeping the world turning. There is less margin for error than ever, and yet teams still have limited insight into complex back end infrastructures.



To maintain operational resiliency the infrastructure team needs to have visibility into the who, the what, the where, the why, etc. Visibility becomes increasingly difficult as the environment grows in complexity. In addition, the presence of multiple support teams complicated matters further as each use different support tools.

With the advent of the cloud, this complexity has only increased. Before the cloud, a distributed application would be distributed across a handful of networks. For example, there would be a Local Area Network (LAN) and a Wide Area Network (WAN) that would allow a few remote offices or branches to use the application. Today, the same application can be distributed across cloud platforms and services in addition to local or on-premise infrastructure.

Large enterprises in particular are dealing with highly complex networks. These networks are often layered over other networks, with each network containing its own applications, and each application maintaining its own accompanying layers of dependencies.

Achieving Transparency

Transparency is achieved by bringing together data from the different parts of the infrastructure into a single, comprehensive view. Monitoring or log analytics applications such as Splunk or Dynatrace are purpose-built to collect this type of information. They have become the industry standard yet they do not provide the complete picture.

Common issues with monitoring applications:

- They look at events that occur as they occur, but cannot predict what is likely to happen next
- License issues may restrict the amount of data that can be stored or accessed at any one time
- They are maintained by individual fiefdoms within the organization (DevOps, SecOps, etc.)
- They are a silo of information, not interacting with or connecting to other applications
- Performance issues when attempting complex queries
- They require skilled technicians to leverage

While software vendors like Splunk, Dynatrace, etc. all play a role in understanding the environment they supply just a part of the big picture.

Transparency is achieved when data from these applications can be combined into a single platform to create a composite view of operations with the other sources of information collected by the organization.

- **Log analytics platforms (such as Splunk)**
- **API Gateways (such as Google Apigee or IBM Connect)**
- **Usage metrics from systems like Google Analytics or Dynatrace**
- **Infrastructure information in Configuration Databases (e.g. ServiceNow) or Cloud (e.g. Azure or AWS)**
- **User information and organizational hierarchy (such as LDAP)**
- **Incidents and problem resolution applications (like homegrown systems)**
- **Budget/Spend reporting (from spreadsheets or custom reports)**



dynatrace

apigee



Google Analytics



Azure



IBM apiconnect



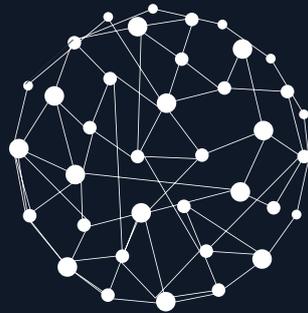
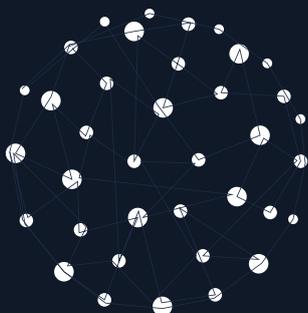
servicenow™

Bringing It All Together

Bringing all of this data together in a single view is not easy. Fundamentally, because the data is sourced from different systems there is no easy way to link records together as they often do not share a common key.

For example, a server known by its IP address in one system might be identified by a text description in another. A user could be identified by their email address in one system and their name or employee ID in another. A mechanism is needed to map these identifiers together.

In many cases, the perceived challenge is far greater than the perceived value given the tools. An easier method is required.



Additional requirements to bring this type of data together:

- **A common repository to store this information**
- **Connectors or integration points to extract the data from the various sources**
- **Integrated security to prevent unauthorized access**
- **A means to make this data easily accessible to all of the stakeholders involved**
- **A means to apply machine learning (ML) to this data to predict future issues**
- **A flexible method of modeling this data (table joins become overly complex)**
- **Automated or scheduled integration**
- **A means to view the relationships between each element (example as in a graph database)**
- **A means to generate reports and dashboards off of the combined data**



WHY PROCESS TEMPO?

The fastest, easiest way to maximize the value of data.

Process Tempo is a hybrid cloud, data management & analytics platform that enables people, processes, and technologies to seamlessly work together. The platform supports a secure, governed, scalable, and high-performance environment for analysts and data scientists while also serving as the foundation to deliver insights to all employees. It helps to deliver markedly fast, actionable, and accurate insights, and its versatility and flexibility allows businesses to maximize the use of data, whatever the opportunity.

Highlights:

- **Cloud, hybrid-cloud, on-premise deployment flexibility**
- **Easy to use, quick to deploy**
- **Supports automation of data processing from start to finish**
- **Integrates with popular platforms such as Salesforce, Postgres, MS SQL, Power BI, Splunk, Tableau, and more**
- **Features include built-in A.I. and M.L., Integrated Search & Discovery, Dashboard Builder, and much more**

People

Designed for Everyone

An easy-to-use, browser-based frontend that supports non-technical users

Built-In Search

Contextual search, like a Google™ for your business

Self-Service Analytics

Immediate access to data without bureaucratic delay

Process

Targeted Domains

Personalized, collaborative data environments to empower teams and their unique projects

Centralized Governance

Manage security and entitlement from a central administrative console

Advanced Analysis

Out-of-the-box solutions to create instant insights

Technology

No-Code, Low-Code

No code approach enables rapid deployment and rapid results

High-End Graph Database

Extreme scalability and performance along with greater design flexibility

Cloud-Ready Data Warehouse

Capture, store and blend data in a single, high performance platform

Process Tempo Managed Analytics

Analytics as a Service from Process Tempo is an analytics solution that helps your entire team make intelligent and profitable decisions by leveraging your data without a heavy, upfront investment. By choosing an efficient, fast, and cost-effective path to insights, we can help you beat your competitors in today's data-driven, competitive digital economy.

Through our service, our customers are quickly and easily maximizing the value of their data through our turn-key, customizable approach that is upgrading existing analytics efforts instantly.

We provide a rapid return on investment and a low-risk alternative to building and maintaining the same analytics capability in-house.

Benefits:

- **Predictable invoicing**
- **Augmented existing analytics capabilities**
- **Significantly reduced IT/Analytics backlogs**
- **Access to world-class data experts**
- **Complete, end-to-end data processing support**
- **Architecture and design expertise**
- **Dashboarding and reporting**

NEXT:

| [Use Cases](#)



Use Cases

Data Monetization



Process Tempo provides the perfect platform for organizations attempting to monetize their data assets. The platform offers a simple, browser-based interface designed for non-technologists which helps increase end user adoption and therefore increase the revenue potential. Process Tempo also provides a multi-tenant capability allowing for controlled access to information.

Infrastructure Analytics



As cloud and hybrid-cloud environments increase in complexity it becomes more and more difficult to manage and maintain this environment. Infrastructure analytics helps organizations keep track of this environment by bringing multiple datasets together to create a map of the systems and applications the organization relies on. In doing so, the team responsible for managing this environment can minimize downtime and detect problems before they occur.

Customer 360°



Customer 360° is the ability to understand every facet of a specific customer's journey so that the organization can adopt a personalized approach addressed to their specific needs. A high degree of personalization helps to keep customers happy. The challenge is that customer data can be found in a multitude of systems and bringing this data together can be a challenge. This is where Process Tempo excels helping organizations to map this data together to create a single, composite view of each customer.

Mergers & Acquisitions



Whether it's for pre-merger analysis or post-merger planning, analytics as a service can help move organizations forward with confidence. Process Tempo can help with system consolidation, process mapping, asset inventory, people planning and much more.

Clinical Trials



Establish clinical data repositories that can reduce costs, alleviate trial delays, and improve operations by expertly categorizing critical areas such as specialty, experience, and performance. Provide on-demand, online database access, pre-built reporting and analysis, custom reporting and analysis, and peer reviews - all under a single platform.

Education Intelligence



A fast and cost-effective approach to creating composite views of student data. Help assure higher student success rates and develop effective and personalized learning pathways.



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