

Business Process Analysis with Worksoft Analyze®

Using analysis and visualization features in Worksoft Analyze

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ABSTRACT

Worksoft Analyze® surfaces information in the context of business process including activity flow, human and system performance, timing and execution counts, or any business metric supplied by the user. An analyst using Worksoft Analyze performs any number of investigations into business process performance and impact on the enterprise. Worksoft Analyze enables efficiency at enormous scale, even enterprise-wide analysis of all core business processes, their variations, and every tracked business transaction. This paper explores these capabilities in Worksoft Analyze, and offers best practices for the effective use of this feature set within the solution.

INTRODUCTION

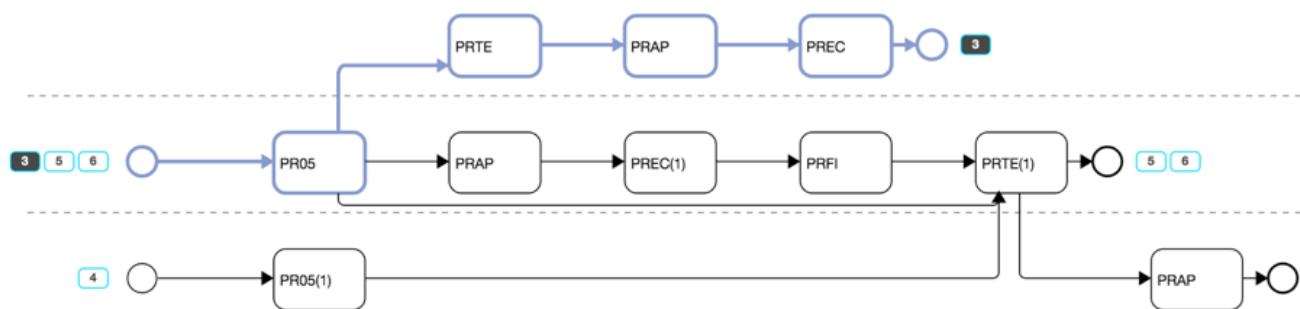
Worksoft Analyze supports automated business process discovery and visualization. By using Analyze across a diverse range of application end-users, an understanding of the paths and flows of business process across the enterprise is developed. Although primarily designed to perform automated business process discovery and documentation, Worksoft Analyze maintains and reports data on the actual performance of business process across a wide range of metrics.

Users of Worksoft Analyze manipulate and visualize this and external sources of metrics on discovered business processes, making a number of unique analysis capabilities available. This functionality helps business process performance measurement and improvement projects, as well as insight into business process effects on the enterprise.

MULTI-VARIANT VIEW

The Multi-Variant view is the primary visualization technology in Worksoft Analyze, and represents the different flows through related business processes known to Worksoft Analyze. For example, this allows the user to visually represent a company’s core raw materials purchasing process and every geographic variation in a single view.

This view is typically populated with data from users performing Capture using the Analyze software for “as-is” business process discovery, but may also be populated with external sources of business process knowledge, including existing functional test libraries from Worksoft Certify®.



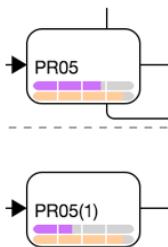
Unlike traditional business process diagrams designed to illustrate all possible flows, the Multi-Variant view represents the differences between business processes sharing common business activities in as compact a diagram as reasonably possible. This allows the analyst to readily see differences in flow among actual performances of business process.

In the Multi-Variant view, a dashed-line “swim lane” represents a variant in the business process, and a solid line indicates separate processes with no shared activities. Variations of business process sharing business activities are consolidated into a single lane where possible. The intelligent software makes a significant effort to consolidate as much as possible, producing the most compact view accurately representing the differences between business process flows observed or harvested from external sources.

The Multi-Variant view is interactive for the Analyze user. Using the Variant Indicator, Worksoft Analyze provides a way to anchor the selection of a variant, or flow through a business process. In the example above, variant 3 has been selected, and the business path highlighted. The variant numbers are assigned by the system, and will vary from picture to picture depending on the process flows.

ANALYSIS OVERLAY HEAT MAPS

In Worksoft Analyze, the Analysis Overlay (or Heat Map) concept visually overlays the values of internal and external business and technical metrics on the business process. The results visually identify high and low marks of any metric by business activity across a range of distinct and related business process flows as compared relatively to each other. These values are normalized relative to the business activities in the Workspace and represented as bar graphs in the business activity representation:



Two heat maps may be selected at one time, resulting in a correlation analysis. This is especially useful when looking for patterns or relationships in metrics data visually.

By default, Worksoft Analyze automatically collects Capture Count and Think Time for all Capture (human) performances of business process, and Errors and System Time for all Certify (automated testing) processes imported into Analyze.

Additionally, the user may import any metric desired to be correlated with business process automatically by Analyze. This is commonly systems metrics from computing sources, or business metrics from sales or operations data useful to analysis against business process knowledge discovered by Worksoft Analyze.



CREATING ANALYSIS SCENARIOS

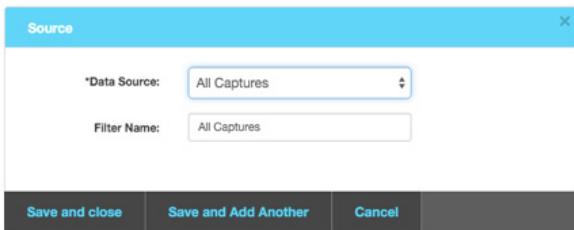
There are two requirements to any analysis in Worksoft Analyze, sources and overlay metrics. Sources draw the picture in the Multi-Variant view. They are generally Captures or Worksoft Certify processes used for functional test automation. Overlay metrics paint the heat map graphs in the representation of business activities in the Multi-Variant view. Overlay metrics come from Analyze directly in the form of Capture or Certify process metrics, or may be imported to Analyze using the user defined heat map feature. Both sources and overlay data selections are managed by the Workspace.

WORKSPACES

The Workspace concept is an essential feature to the success of business process analysis using Worksoft Analyze. A successful analysis project is meaningful and easy-to-grasp by business users, contains the scope of work to the business area of interest, and removes unnecessary processes and details from the resulting visualization. Workspaces in Analyze are ideal for this task.

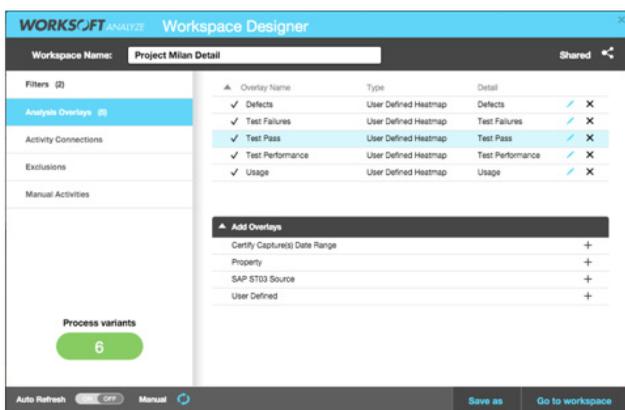
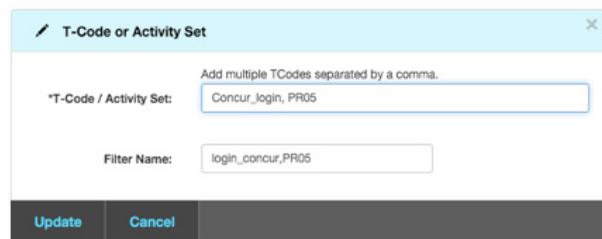
When using Analyze, create Workspaces with these features in mind:

- Using filters, scope the business process flow diagram to just the business area of interest.
- Use Workspaces liberally. Create one for each different analysis if desired. Using this approach, one may return to a previous analysis easily, updating areas of interest or evaluating change over time. These workspaces may also be shared, giving others access to the analysis.
- Name the Workspaces logically, for example “Sales Distribution Coverage;” this will help document the business area of focus for the Workspace.



The Workspace Designer is the primary tool in Worksoft Analyze for creating a workspace to provide business process analysis. Begin with a source. The source and filters set the business processes of interest in the Workspace, and control the multi-variant visualization.

Use filters to narrow the scope of business process to a single area of interest. Workspaces with large numbers of variants are difficult to consume visually, and will not reward the user with the same simplicity of observation a smaller, more focused Workspace provides.



The built-in analysis overlays, including Capture Count, Think Time, Errors and System Time, do not require additional configuration, and work automatically based on the sources selected and filters used. User defined analysis overlays and visualizing ST03 data from SAP require additional configuration by the Analyze user.

In this example, a number of external overlay metrics were configured to be available for analysis on the visualized business process.

For more information on using workspaces, see the whitepaper titled “[Workspaces in Worksoft Analyze.](#)”

BUSINESS ANALYTICS IN PRACTICE

Worksoft Analyze supports the combination of sources and overlays to provide a visualization of correlated business activities and metrics. Depending on how these are selected and combined, a number of observations are possible. All analysis is performed within the scope set by a Workspace. This guide illustrates some of the more common examples:

Business Analysis	Diagram	Overlay #1	Overlay #2
<p>“What business activities are performed the most?”</p> <p>Analyze indicates the most commonly executed (Captured) business activities for the subset in the diagram. This is useful for determining frequently executed business activities and prioritizing the development of automation assets.</p>	Captures or Mined Processes	Capture Count	na
<p>“What SAP transactions in this business process set are performed the most often?”</p> <p>Analyze indicates the most commonly executed SAP transactions for the subset in the diagram. This is useful for identifying the most commonly executed SAP transactions from a subset of business activities. When used on diagrams with exception business process flows, this indicates likely rework or unexpected “work-around” activities in business process when outlier and exception processes have excessive execution.</p>	Captures or Mined Processes	ST03 Data	na
<p>“Which business activities take the most time?”</p> <p>Analyze indicates the business activities with the longest execution times from a human performance perspective. This may indicate “low hanging fruit” where process or activity redesign could deliver performance or efficiency.</p>	Captures or Mined Processes	Think Time	na
<p>“Which business activities are the most time consuming and execute the most often?”</p> <p>Analyze indicates the business activities taking the longest for human users to execute correlated with SAP Transaction information indicating the most commonly executed transactions. This is a further refinement of the “low hanging fruit” for process redesign concept, adding a prioritization based on system utilization.”</p>	Captures or Mined Processes	Think Time	ST03 Data

Business Analysis	Diagram	Overlay #1	Overlay #2
<p>“Which business activities have the highest or lowest levels of my custom metric?”</p> <p>Analyze surfaces user-defined information on the business process multi-variant view. The customer’s provided data is correlated with the business process by business activity. This is an especially powerful feature, and could be used to surface additional system or human metrics, or to express business value, such as the revenue impact of a given process execution.</p>	Captures or Mined Processes	User Defined	na
<p>“What do my human users do that I test and don’t have tests for?”</p> <p>Analyze indicates the known business processes from human users, and where existing Certify automation does and does not exist. This is basic coverage analysis, and helps identify where automation should be developed to test business processes performed by end-users, but not tested by the current automation library.</p>	Captures or Mined Processes	Process Source: Certify Processes	na
<p>“What do my human users do that I test and don’t have tests for, and which ones should I build tests for first?”</p> <p>Analyze indicates coverage analysis with a correlation to the mostly commonly executed SAP transactions. This is a measurement of prioritized coverage risk, and helps customers identify automation priorities.</p>	Captures or Mined Processes	Process Source: Certify Processes	ST03
<p>“What do my human users do that I test and don’t have tests for, and which ones should I build tests for first?”</p> <p>Analyze indicates coverage analysis with a correlation to the mostly commonly captured business activities. This is a measurement of prioritized coverage risk, and helps customers identify automation priorities.</p>	Captures or Mined Processes	Process Source: Certify Processes	Capture Count
<p>“What do my human users do that I test and don’t have tests for, and which tests fail the most often?”</p> <p>Analyze indicates a standard test coverage map, but also indicates where testing is most likely to fail. By correlating the amount of coverage for a given business process with error rates, Analyze helps determine unnecessary testing execution or areas deserving of additional coverage for application quality/business risk reasons.</p>	Captures or Mined Processes	Process Source: Certify Processes	Errors

Business Analysis	Diagram	Overlay #1	Overlay #2
<p>“Which of my business processes are changing as a result of this transport set? Of those, which are used the most?”</p> <p>Analyze Indicates processes subject to change as a result of a transport set for the subject in the diagram. The use of ST03 adds additional insight into priority or frequency of use.</p>	Captures or Mined Processes	Impact Results	ST03
<p>“What do my human users do that I test and don’t have tests for, and which business processes will change as a result of this transport set?”</p> <p>Similar to Impact results for Captures only, this presentation indicates both coverage and change concurrently, identifying potential risk for this transport set.</p>	Captures or Mined Processes	Certify Processes	Impact Results
<p>“What business processes might require additional documentation?”</p> <p>Analyze indicates the business processes discovered through process mining vs. those discovered using Capture. For training, compliance and other applications where detailed documentation is required, the perfect fidelity of Capture may be beneficial for processes discovered via mining.</p>	Mined Processes	Captures	
<p>“What business process tests fail the most often, and in what business activity?”</p> <p>Analyze indicates the business activities where existing automation is most likely to fail. This could be because of system, application or process reliability, or could indicate where additional automation hardening would be valuable.</p>	Certify Processes	Errors	na
<p>“What activities in business process tests execute slowest on the system and how often are human users executing those activities?”</p> <p>Analyze indicates where slow system response time correlates with commonly executed business activities. An application development or performance team would use this information to prioritize software and hardware investments to improve application performance with the biggest impact to the organization.</p>	Certify Processes	System Time	ST03

Business Analysis	Diagram	Overlay #1	Overlay #2
<p>“What activities in business process tests fail the most often, and how often are human users executing those activities?”</p> <p>Analyze indicates where existing automation fails most frequently, correlated with the most commonly executed SAP transactions. This helps prioritize investments in application remedy or automation hardening efforts.</p>	Certify Processes	Errors	ST03
<p>“What am I testing that users actually do?”</p> <p>Analyze indicates what processes in the automation library are actually performed by real users. This may be useful for retiring old automation.</p>	Certify Processes	Process Source: Captures or Mined Processes	na
<p>“What historical business process flows in SAP is the system aware of, and have end-users performed captures for them useful to the generation of automation? How often are these transactions executed by end-users?”</p> <p>Analyze indicates known business processes from SAP with a correlation for processes with existing captures. This is a roadmap to automation coverage for a customer. The use of ST03 correlates a priority to the analysis, identifying the processes and activities which should be captured first.</p>	Mined Processes	Process Source: Captures	ST03
<p>“What business processes are known by the SAP system, and do tests in Certify exist to validate them? How often are these business processes executed by end-users?”</p> <p>Analyze indicates known business processes from SAP with a correlation to existing automation. This identifies business processes and activities performed with no analog in automation. The use of ST03 correlates a priority to the analysis, indicating to the customer the amount of coverage risk existing in actively used business processes.</p>	Mined Processes	Process Source: Certify Processes	ST03

CONCLUSION

Worksoft Analyze supports a number of advanced analysis capabilities, visualizing internal and external sources of business process metrics, both technical and operational, on discovered business process knowledge. Worksoft Analyze addresses a broad range of business questions at enterprise and department levels easily, making it unique in the marketplace.

Analyze Workspaces create reusable analysis assets and starting points useful across the enterprise. User-defined overlays correlate and measure information from Analyze or other systems and sources in the context of business process knowledge. The use of the dual analysis creates a visual correlation of metrics across business processes, and simplifies complicated measures including testing coverage, exposure and risk, redundant effort in testing, and investment priority for the business.

ABOUT WORKSOFT, INC.

Worksoft® is a leading global provider of automation software for high-velocity business process testing and discovery. Enterprises worldwide use Worksoft intelligent automation to innovate faster, lower technology risk, reduce costs, improve quality, and deeply understand their real end-to-end business processes. Global 5000 companies across all industries choose Worksoft for high speed process discovery and functional testing of digital, web, cloud, mobile, big data, and dozens of enterprise applications, including SAP®, Oracle, and Salesforce.com.

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