Celonis' New Task Mining Engine Re-Aligns Work to Optimize Business Outcomes

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IDC's Quick Take

New task mining capabilities plug an important gap in Celonis' process optimization portfolio, providing needed end user interaction data to produce insights into how manual work is performed. While valuable for automation planning, Celonis' primary opportunity is harnessing the data with AI in near-real-time to automate and augment tasks dynamically to drive better business outcomes.

Product Announcement Highlights

On October 9, 2019, Celonis broadened its process mining capabilities to support task mining with the introduction of Task Mining Engine. Celonis views task mining as an extension to its larger process optimization portfolio, providing data depth that supports:

- End-to-end process optimization, including task-level efforts to improve business outcomes
- Workforce behavior optimization by identifying task patterns that lead to optimal outcomes
- Productivity improvements that lend themselves to automation or to re-design of tasks to improve employee experience

Task Mining Engine includes cloud-based processing and AI capabilities in addition to the new Celonis Task Recorder that captures end user interaction events, including keystrokes, mouse clicks and screen and image snapshots that are continuously pushed into the Task Mining Engine. The mining capabilities interpret the data by applying natural language processing (NLP) and OCR to correlate data in different ways, including:

- Using NLP to model topics and to identify and enrich key data, such as a user name, keywords, labels, customer name, order IDs, etc.
- Identifying contextual information from the screenshots through use of OCR
- Clustering topics and associating with higher level activities
- Performing statistical analysis about the task and activities to compare which tasks produce the best business outcomes

Celonis links user interaction data with existing business data from operational systems via an Event Log. Using the Celonis Process Mining AI engine, the interaction event data (business and user) is linked to a multi-dimensional data model that contains data about process performance, which provides a mechanism to link event log analysis (process analysis) to business metrics/outcomes.

Celonis Machine Learning takes the business and user interaction data as inputs and returns predictions about how a task or set of activities should be performed to optimize the outcome. These insights may be:

- Delivered to task workers as recommendations based on the statistical analysis of how tasks are performed to achieve the best business outcome. The recommendations change as the algorithms identify more effective methods to perform the work.
- Sent to the UI team to recommend a UI refresh to reflect the best way to perform a task.
- Sent to a process improvement team, recommending that the task itself should be automated.
- Correlated with backend data collected using Celonis' process mining capabilities, particularly to tie new task data to work in process, such as an outstanding order or a collection of recent business transactions.

By way of example for the last point, Celonis describes a use case from one of its pre-release customers, where task mining combines user interaction data with business data of "free-text" orders (unstructured content) feeding a machine learning model. The AI-based algorithm makes a prediction of the items ordered. The prediction is delivered as a recommendation via Celonis Action Engine, where a worker opens the recommendation along with the original free-text order and determines whether to accept the recommendation, reject and manually rekey or edit to correct. When the recommendation is accepted or adjusted, Action Engine sends the order to the receiving application. Combining predictive analytics with human worker oversight resulted in more accurate free-text order processing and improved on-time order delivery.

IDC's Point of View

Celonis reframes how task mining is used for process improvement by connecting task mining to process mining and business metrics. The traditional use case for task mining is to collect interaction data to identify repetitive steps that can be automated, such as removing manual data entry by using capture software or use of robotic process automation to mimic human work. Analysis produced by task mining typically identifies:

- Steps taken to perform a task, with the potential for replacing workers with automation
- Task efficiency and variance across end users performing the same work
- Metrics about workers and top performers of discrete tasks, such as task duration or worker productivity

Unlike Celonis' approach, standalone task mining doesn't correlate whether the least efficient worker is actually a top performer measured by financial performance or customer experience metrics. Examples include an effective inside sales rep who may take more time qualifying a lead or a customer service agent spending above-average time on a call to solve a problem. Based on business outcomes, both are successful in their jobs. Using only task mining, these workers could be retrained or fired for sub-standard performance.

By comparison, customers using Task Mining Engine are able to identify the combination of activities used by the top performer in inside sales or most effective call center worker. In the case of inside sales, the metric used to assess performance shifts to an outcome metric -- lead conversion rate -- rather than the process activity metric of number of leads touched. This information is possible because Celonis links three types of information – user interactions, operational data and business metrics.

Celonis also uses the output of its task mining to deliver recommendations about how to perform tasks or automate a task. Because tasks and activities can be continuously optimized to improve outcomes by using AI, use of Celonis can make processes more dynamic.

Many vendors involved with technology to enable process improvement and automation are building software or software extensions aimed at task mining. They need the regular collection of data to shift to AI and predictive analytics.

Celonis sets the bar for what will be required to succeed in process improvement, including task automation and augmentation. Celonis' AI-driven approach bypasses automation-centric improvement by understanding when automation is the optimal choice and when highly efficient human-in-the loop interactions may ultimately drive down the cost of mistakes and make processes not just more efficient, but in fact more resilient. This combination increases the odds that an enterprise process improvement will yield better outcomes and should ultimately change how teams approach process improvement.

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