Enabling working capital management with a data-driven analytical approach
Working capital management is one of the most critical focus areas for enterprises to manage the disruptions across supply / demand value chains and stay healthy. Unprecedented crises disrupt cash flow by manifolds pressuring the finance departments to align with data in near real-time and keep up with emerging situations to dynamically manage their cash positions, payables and receivables.

The office of CFO needs to continuously monitor the trends of DSO/DPO/DIO and optimize the cash conversion cycle. They need to work with lenders to identify appropriate funding at right points in the supply chain and invest excess capital to maximize returns.
Key challenges in working capital management

**Fragmented and siloed data and formats**

In large enterprises, system landscape is quite diverse with many ERP products and capital management solutions. The teams perform analysis in silos, on different platforms and in different formats. In some enterprises, even payment terms are negotiated in silos. In small and medium enterprises, most working capital analysis is done on excel sheets for each metric. This results in sub-optimal decisions on investments and borrowings, impacting the working capital. This ad-hoc approach and reliance on manual ways limits the organization to effectively manage working capital.

**Use case based approach for Analytics**

Different teams in an enterprise leverage analytics on a use case basis to address challenges on working capital management. This use case based approach calls for huge cost and effort for every data science life cycle. The data discovery and data preparation cycles are extremely cumbersome to manage thus affecting the time to market significantly. The insights are also sub-optimal as enterprises are blind-sighted on sources of data across their enterprise.

Enterprises need to have an agile data management and integration solution to create a strong 360-degree data foundation and a library of AI/ML models to ensure efficient working capital management.

**Infosys Working Capital Analytics powered by Infosys Genome Solution**

**Infosys Genome Solution** with near real-time data integration/ transformation and with a library of powerful AI models provides actionable insights for optimally managing working capital. The solution can integrate with the existing systems of record for financial data (Oracle, SAP or any other) and can be implemented on-premises or on cloud-based data-lake to provide the recommendations for actionable insights. For a large business, this can positively augment the functions of ERP systems and, for small and medium businesses it can be a quick means to optimize the payables and receivables.

**Technology Features:**

- End-to-end automation pipeline from data ingestion to transformation to consumption with components deployable on need basis
- A deep domain data model for one-stop data shop
- Self-service analytical data aggregating facility for scalability and reusability
- API based integration capabilities for actionizing recommendations

**Functional Features**

- Insights on working capital position & trends of factors such as cash position, accounts payable, account receivable, funding and costs
- Account level balance forecast using composite ML based modelling (requires exploratory analysis, training and testing for new segments of data)
- Maximize returns on idle cash with Smart Sweep Advice, an element of the solution
- Observe from the CFO office, the changes & trends of DSO, DPO, DIO & CCC on strategic decisions
- An ever expanding library of designs for insights & analytical models
Priority execution approach

While the solution has a wide range of features, some of the most critical use cases that can be prioritized by Treasury management department for immediate actions are:

- **Accounts Receivable Analytics**
  - User Story: As the Treasury Manager of my organization, I need insights & recommendations on my receivables beyond the capabilities of my ERP, in order to focus my collection efforts efficiently to improve the cash flow.

- **Accounts Payable Analytics**
  - User Story: As the Treasury Manager of my organization, I need insights & recommendations on my payables beyond the capabilities of my ERP, in order to organize my payments for optimum cash flow.

- **Cash Balance Forecasting and Smart Sweeps**
  - User Story: As the Treasury Manager of my organization, I need a reliable forecast of the balances in the accounts, in order to optimize the sweep strategy with the bank and reduce idle capital.

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Dashboards for Receivables Insights & Advanced Analytics

Dashboards for Payables Insights & Advanced Analytics
Benefits of Infosys Working Capital Analytics Solution

- Increased optimization of receivables & payables through the application of analytical models
- Insights on suppliers, customers and their payment patterns to decide dynamic discounts and partial payments
- Insights to plan for receivables financing, pre-shipment finances and for negotiations on changing payment terms
- Reduce idle cash and excess working capital reservation
- Prevent occasional short-term dips and spikes in the past balances driving the sweep strategies

Recommendations for negotiating appropriate payment terms, what-if analysis on the impact of dynamic discounting, waivers and extensions on the cash position, probability of delaying or defaulting on invoice payments, inventory insights, insights for revenue forecasting & budgeting are being worked upon.

Dashboards for Cash Balance Forecasting & Smart Sweeps

Earning Maximization Using Smart Sweep - Case 1

Cumulative Interest Earned

Recommendations:

- Set OD limit to $10,000
- Sweep day-end balance @ EOD
- Consider the EOD OD balance for Smart Sweep
- For dynamic discounts and partial payments, review the payment patterns to decide appropriate payment terms, what-if analysis on the impact of dynamic discounting, waivers and extensions on the cash position, probability of delaying or defaulting on invoice payments, inventory insights, insights for revenue forecasting & budgeting are being worked upon.
Agile Implementation

An agile approach is employed for implementation of Infosys Working Capital Analytics Solution.

The above mentioned benefits can be implemented in 10 to 12 weeks. Use cases that cannot be scaled for diverse data such as ‘cash balance forecasting’ will need exploratory data analysis, training and testing of models at each phase.

- **Discovery** – 2 weeks of discovery to identify and analyze the sources, their data models and formats
- **DevOps based pilot use case** – 8-10 weeks of data mapping, installing Genome accelerators, pipelines configuration, implementation of analytical model and dashboards, testing and scheduling
- **Sprint-wise augmentation** – 6 week sprints for subsequent use cases for data mapping, implementation, testing and scheduling

![Agile Implementation Flowchart]

- **Activities & Dependencies**
  - Understand technical and data architecture
  - Define the use case and scope for POC
  - Setup the environment
  - Stakeholder identification

- **Deliverables**
  - Architecture
  - High level mapping
  - POC implementation Plan
  - Directional outcomes of the PoC

- **Sprint 0 Establish & Implement Pilot**
  - Offline data ingestion
  - Execute: Raw > Curated > Transformed
  - Perform source to target mapping
  - Develop data flow scripts & processing engine
  - Implement Genome data store (Gene Blocks & Genome)
  - Customize Genome Market Place (GMP)
  - Demonstrate & plan next sprint

- **Sprint 1..N Implement Use Case(s)**
  - Customize & Implement : Automated data ingestion using Infosys Information Grid (IIG) and Genome automation framework
  - Perform data ingestion and transformation
  - Develop and train analytics model
  - Build reports and visualization
  - Demonstrate & plan for next sprint

- **3-4 weeks**
  - Subject area wise networked data products (Gene Blocks): ~ 2
  - Derived analytics features (Genome): ~20
  - Visualization: Invoice Insights, Payments & Collections Insights

- **8-10 weeks**
  - Gene Blocks: ~ 2
  - Genome : ~20
  - Advanced models and visualizations

- **6 Weeks per Sprint**

**Agile implementation approach**