

# ServiceFlow Analytics

## Operations-to-Cash Performance Intelligence

### *Functional Requirements Document (FRD)*

<b>Project Name</b>	ServiceFlow Analytics
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#### 1. Purpose of This Document

This FRD defines the functional design of the **ServiceFlow Analytics** reporting solution, including:

- Dashboard page structure and intended usage
- KPI calculation logic and validation rules
- Data requirements and reporting model expectations
- User interaction requirements (filters, drilldowns, usability)

This document supports implementation and ensures stakeholders agree on expected reporting behavior.

#### 2. Solution Overview

##### **2.1 Reporting & Dashboard Capabilities**

ServiceFlow Analytics provides unified reporting visibility across Operations → Invoicing → Collections, enabling tracking of job execution, invoicing delays, receivables exposure, and job cost performance.

The solution is delivered as a Power BI report connected to a centralized reporting dataset.

### 3. User Roles & Access Expectations

Role	Usage Expectation
CFO	Reviews financial exposure, collections health, high-level KPIs
VP of Operations	Reviews execution trends, cycle time performance, operational bottlenecks
Finance Manager	Tracks unbilled exposure, overdue invoices, collections performance
Finance Analyst	Validates KPI outputs, supports reconciliation/exceptions review
Operations Manager	Tracks job completion, cycle time, job execution throughput
IT Admin (Support)	Ensures reporting dataset and refresh availability

### 4. Dashboard Structure (Pages & Functional Requirements)

#### **4.1 Page 1 - Executive Summary**

Purpose: One-page high-level performance snapshot.

##### **Key Visuals Required**

- KPI cards for:
  - Completed Jobs
  - Completed Jobs Not Invoiced (count)
  - Unbilled Revenue Exposure (amount)
  - Days Sales Outstanding (DSO)
  - Overdue Invoices (count)
- Trend chart:
  - Completed jobs over time (monthly)
- Distribution chart:
  - Job status overview

##### **User Actions Supported**

- Filter by Region
- Filter by Service Type

#### **4.2 Page 2 - Operational Performance**

Purpose: Operational execution visibility and throughput monitoring.

### **Key Visuals Required**

- Job status distribution (counts)
- Completed job trend (monthly)
- Top service types by completed jobs
- Cycle time comparison by Region
- Table for job-level drilldown (Job Number, Status, Dates, Region, Service)

### **User Actions Supported**

- Filter by Region
- Filter by Service Type
- Drilldown into job-level records

## **4.3 Page 3 - Financial Performance & Collections**

Purpose: Receivables health monitoring and collections performance.

### **Key Visuals Required**

- KPI cards for:
  - Average DSO (days)
  - Outstanding Amount (total)
  - Overdue Invoice Count
  - Outstanding Invoice Count
- AR Aging visualization:
  - Overdue invoices grouped by aging buckets
- Outstanding amount breakdown:
  - By region and/or service type
- Table for invoice drilldown:
  - Invoice Number, Customer, Invoice Date, Due Date, Amount, Balance Due, Status

### **User Actions Supported**

- Filter by Region
- Filter by Service Type
- View invoice-level records for validation

### **4.4 Page 4 - Exceptions / Reconciliation**

Purpose: Identify breakdowns and mismatches across the job-to-cash lifecycle.

### **Key Visuals Required**

- Completed but Not Invoiced jobs list (exception table)
- Jobs with high cost variance (exception table)
- High cost variance is defined as variance % > 10% (configurable threshold)
- KPI card: Unbilled Jobs Count
- KPI card: Jobs with Cost Overrun Count
- Chart for exceptions distribution by region or service type

### **User Actions Supported**

- Filter by Region
- Filter by Service Type
- Drilldown to exception records

## 5. KPI Functional Definitions (Reporting Logic)

### **KPI-01: Invoice Handoff Delay (Completed Jobs)**

#### **Output Required**

- Count of jobs that are completed but not invoiced
- Days pending invoicing

#### **Logic**

- Job is completed when job status = COMPLETED
- Job is invoiced if linked to invoice line items
- Pending Days = CURRENT\_DATE() - completed\_date

#### **Exclusions**

- Cancelled jobs are excluded

## **KPI-02: Days Sales Outstanding (DSO)**

### **Output Required**

- Average number of days to collect payment after invoice issue

### **Logic**

- Consider invoices that are fully paid only
- DSO Days = Final Payment Date - Invoice Date
- Final Payment Date is defined as the latest payment\_date for the invoice where total payments >= invoice\_amount.
- KPI output is average DSO across fully paid invoices

### **Exclusions**

- Unpaid or partially paid invoices excluded

## **KPI-03: Job Cost Variance**

### **Output Required**

- Actual cost vs estimated cost variance by job
- Variance amount and variance percentage

### **Logic**

- Actual cost = SUM(job\_costs.actual\_amount)
- Variance Amount = Actual Cost – Estimated Cost
- Variance % = Variance Amount / Estimated Cost

### **Exclusions**

- Jobs with estimated cost = 0 excluded
- Jobs without recorded cost excluded

## **KPI-04: Unbilled Revenue Exposure**

### **Output Required**

- Total revenue value of completed jobs that are not invoiced

### **Logic**

- Filter to jobs with status = COMPLETED

- Exclude jobs linked to invoices
- Sum estimated revenue for completed jobs not linked to invoices

## **KPI-05: Job Cycle Time**

### **Output Required**

- Average cycle time days

### **Logic**

- Cycle Time = completed\_date - scheduled\_date
- Only completed jobs considered

### **Exclusions**

- In-progress jobs excluded
- Cancelled jobs excluded

## 6. Reporting Dataset Requirements (Tables & Required Fields)

### **6.1 Required Tables**

<b>Area</b>	<b>Tables</b>
Operations	jobs, customers, dim_region, dim_service_type, dim_job_status
Finance	invoices, invoice_line_items, dim_invoice_status
Collections	payments
Cost	job_costs, dim_cost_type

### **6.2 Required Fields by Entity**

#### **Jobs**

- job\_id
- job\_number
- customer\_id
- region\_id
- service\_type\_id
- job\_status\_id
- scheduled\_date
- completed\_date

- estimated\_revenue
- estimated\_cost

## **Customers**

- customer\_id
- customer\_name
- region\_id

### Invoices

- invoice\_id
- invoice\_number
- customer\_id
- invoice\_status\_id
- invoice\_date
- due\_date
- invoice\_amount
- balance\_due

## **Invoice Line Items**

- invoice\_id
- job\_id

## **Payments**

- payment\_id
- invoice\_id
- payment\_date
- payment\_amount

## **Job Costs**

- job\_cost\_id
- job\_id
- cost\_type\_id
- actual\_amount

## 7. Data Model & Relationships (Reporting Model Rules)

### **Required Relationships**

<b>From Table</b>	<b>Key</b>	<b>To Table</b>	<b>Key</b>	<b>Relationship</b>
customers	customer_id	jobs	customer_id	1 : Many
dim_region	region_id	jobs	region_id	1 : Many
dim_service_type	service_type_id	jobs	service_type_id	1 : Many
dim_job_status	job_status_id	jobs	job_status_id	1 : Many
customers	customer_id	invoices	customer_id	1 : Many
dim_invoice_status	invoice_status_id	invoices	invoice_status_id	1 : Many
invoices	invoice_id	invoice_line_items	invoice_id	1 : Many
jobs	job_id	invoice_line_items	job_id	1 : Many
invoices	invoice_id	payments	invoice_id	1 : Many
jobs	job_id	job_costs	job_id	1 : Many
dim_cost_type	Cost_type_id	job cost	cost_type_id	1 : Many

## 8. Filters & Interaction Requirements

### **Required Slicers**

- Region Name
- Service Type Name

### **Interaction Rules**

- All KPI cards must respond to slicer selection
- Charts must cross-filter each other (where appropriate)
- Tables must allow drilldown and record inspection

## 9. Validation & Quality Rules

The report must support validation through:

- Clear KPI definitions and filtering rules
- Consistent results across pages for the same KPI
- Reconciliation capability:
  - Completed jobs must match expected job status totals
  - Job-to-invoice linkage must be explainable
  - Invoice-to-payment linkage must be verifiable

## 10. Non-Functional Requirements (Implementation Expectations)

- Dashboards must load under normal conditions without manual data cleanup
- Measures must remain consistent across visuals
- Dataset refresh should not break the report layout
- Output must remain understandable without needing external spreadsheets

## 11. Approval

This FRD documents the functional design and reporting behavior for ServiceFlow Analytics and serves as the implementation baseline for KPI reporting, stakeholder dashboards, and exception monitoring.