

ServiceFlow Analytics

Operations-to-Cash Performance Intelligence

Functional Requirements Document (FRD)

Project Name	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
- $\text{DSO Days} = \text{Final Payment Date} - \text{Invoice Date}$
- Final Payment Date is defined as the latest payment_date for the invoice where total payments \geq 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

- $\text{Actual cost} = \text{SUM}(\text{job_costs.actual_amount})$
- $\text{Variance Amount} = \text{Actual Cost} - \text{Estimated Cost}$
- $\text{Variance \%} = \text{Variance Amount} / \text{Estimated Cost}$

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

Area	Tables
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

From Table	Key	To Table	Key	Relationship
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.