CBA - Functional flow mapping to assets

What do we do? Functional flow

WSMS | System Overview
Mapped to Business Functions

Functional area	Tool	Current functionality	Technical Stack	Integration Points	User roles and permissions	Training and support material
Device connectivity Proactive failure	HP Smart device services JAM Stratus FM Audit server	**HP Smart Device Services** (SDS) is a cloud-based technology that allows HP resellers to significantly reduce service costs, maximize device uptime, and deliver an exceptional service experience to their customers. SDS integrates into multi-vendor Managed Print Service (MPS) software solutions, providing advanced monitoring and management capabilities for HP devices using original HP supplies. It is designed to work with smarter devices, machine learning, predictive analytics, and advanced device controls that can be made remotely, leading to superior device uptime and better office productivity. For internal training purposes, HP resellers use SDS to rethink service delivery, moving from traditional methods to more digital, data-driven approaches. SDS is part of the HP and reseller fleet management solutions, seamlessly integrating into HP MPS and other industry-leading MPS software solutions. Additionally, SDS features are expandable and include documentation, counters, whitepapers on impression-based usage, and service counts, as well as frequently asked questions regarding the service. For any further details or support regarding HP SDS, there are relevant contacts such as HP SDS Push Publish and HP SDS App Support. The JAM tool in the context of Device connectivity refers to the **Jet Advantage Management Connector (JAMC)**, which is used in conjunction with HP Device Connect. JAMC is a key component in the HP Managed Print Services (MPS) ecosystem, facilitating the connection and management of devices. It is used for registering and authorizing users on JAM, adding customers and devices to JAMC, and managing device credentials. The JAM Connector can be downloaded with a registration key from the JAM management site and installed on a Windows server or PC. JAMC is part of the broader Jet Advantage Management (JAM) suite, which includes Smart Device Services (SDS) for advanced monitoring and management capabilities. JAM and SDS together provide a comprehensive solution for device connectivity, supplies management, remote remediation, and diagnostics before dispatch. Additionally, JAM is integrated into the HP MPS Tool Sets and can be accessed through industry-leading third-party ISV tool sets or through portable SDS APIs for strategic reseller engagements. The **Stratus** tool in the context of Device connectivity is part of the HP Managed Print Services (MPS) ecosystem and plays a significant role in device management and connectivity. It is involved in various functions such as: • **Device Provisioning**: Stratus facilitates the onboarding of devices to the Stratus IoT Mesh, ensuring secure and efficient device setup. • **Security Services**: It provides a framework for securing device connections and data transmission within the IoT ecosystem. • **Cloud Services**: Stratus interacts with cloud services for device management, including telemetry and operational data services. • **Device Shadow**: This feature maintains a virtual representation of each device, allowing for remote management and monitoring. • **Connectivity**: Stratus ensures that devices are connected and communicating effectively within the network. • **Telemetry**: It collects and processes device telemetry data, which is crucial for monitoring and managing device performance. Stratus is designed to support the HP vision of a connected and intelligent device ecosystem, providing the necessary infrastructure for advanced device management and connectivity solutions. The FM Audit server tool is a comprehensive data collection and fleet management solution used in the context of Device connectivity. It includes several components: • **FMAudit Viewer**: A data collection tool embedded on a USB key to perform fleet assessments without the need to install software. The data is retained on the USB key for additional analysis and reporting. • **FMAudit Web Audit**: A data collection tool that is part of the Central application. Fleet assessments are performed directly from a browser without installing any software. The data captured is sent directly to FMAudit Central. • **FMAudit Local Agent**: A data collection tool used to discover devices that are connected locally via a USB port or Parallel port. This application is installed at the workstation where the locally connected printer resides. The data captured is sent to one of the other data collection tools (Web Audit, Onsite, or Viewer). The core engine of FMAudit correctly identifies and extracts data from networked printers, copiers, and MFPs utilizing the protocols the devices support. This allows for efficient management of device fleets and ensures accurate data collection for billing and service purposes. For the HP Managed Print Services (MPS) ecosystem, the FM Audit server tool is recognized as the primary data collector for existing customers, with plans to integrate it into the Usage Service for seamless data processing.				
Telemetry processor (supplies level monitoring, page counts tracking)	Usage service Fulfillment service	The Usage Service in the context of telemetry processing is a system that receives data collection data from data collectors and other systems. It analyzes the data, processes supplies levels and lifetime counters, transforms it into useful groups of information, and determines fulfillment needs for auto replenishment of consumables. The service sends data to downstream services which act on the data, including storing the data, presenting it to users, processing quick response to requirements based on various factors, and sending usage data for billing. The Usage Service 2.0 is a microservices-based system, which is an evolution from the legacy system, and it communicates downstream to fulfillment service (ordering) and convergent mediation (billing and invoicing). Data is also sent to BIRD for analysis. The SNS response is used by JAM to see if there is anything to be done in the subsequent response. The Usage Service is designed to handle a high volume of requests with low latency, ensuring quick response to requirements and proactive monitoring and alerts for faster resolution of issues. It supports a plug-in architecture for new business model's support and expandability, and it is a loosely coupled service that can scale independently, leading to cost savings with the new architecture. The Fulfillment Service in the context of telemetry processing is part of the CBA (Contract Billing Automation) ecosystem and is responsible for managing supplies orders generated from upstream submitting systems. It automates the distribution of these supplies orders to various fulfillment partners, whether direct or indirect. The Fulfillment Service includes functions such as customer/supplier configuration, order routing and placement, and providing a view of supplies order status. It works closely with the Usage Service, which predicts the need for auto-replenishment of consumables based on telemetry data, current print utility patterns, and supplies levels. Once the Usage Service determines the fulfillment needs, it communicates with the Fulfillment Service to ensure the supplies are delivered to the device location by reaching out to local supplies distribution centers. This system is crucial for maintaining a seamless supply chain and ensuring that devices remain operational without interruption due to lack of consumables. It represents a significant part of the extreme automation goals of CBA, contributing to global consistency and efficiency.				
Replenishment (supplies	ARC (Automated	ARC, in the context of replenishment, stands for **Automated Reordering of Consumables**. It is a system within the CBA ecosystem that manages supplies				

replenishment, shipment tracking)	reordering of consumables) HP Direct	orders generated from upstream submitting systems. ARC automates the distribution of these supplies orders to various fulfill ment partners, both direct and indirect. The key functions of ARC include customer/supplier configuration, order routing and placement, and providing a view of supplies order status. It ensures that supplies are delivered to the device location by reaching out to local supplies distribution centers. ARC is designed to streamline the replenishment process, reducing manual interventions and improving order cycle times. It su pports the CBA goals of extreme automation, global consistency, and efficiency.				
Security	Paladin	Paladin, in the context of security within HP, refers to an **Authentication and Authorization Fabric** that provides a range of security services. These services include **User Access Provisioning**, **Fine Grain Authorization**, **Traceability**, and compliance with **HP Cyber Security**, **SOX**, **ISO**, and **Fed LLC** standards. It also supports the implementation of a **Zero Trust** security model. The Paladin system offers a **Value Proposition** that includes integration with **HP ID / HP UID**, **Token Management**, **User Access Auto Revoke**, **User Request Workflow**, **Monitoring and Dashboard**, and **Security as a Service**. It is designed to be **centrally managed**, adaptable to existing security mechanisms of apps and services, and requires minimal development effort to secure an app or a service. Paladin aims to standardize security pra ctices and drive a shift in mindset towards more robust security measures. Paladin's architecture includes **Policy Enforcement Points (PEP)** and **Policy Decision Points (PDP)**, which are extensions from Paladin to enforce security at the edge. These are inspired by XACML but implemented using OPA (Open Policy Agent) and support both end -user to service via web app and service to service transactions.	**Frontend:** Angular **Backend:** Apigee Edge Cloud, AWS Lambda, AWS RDS, Hasura GraphQL **Database:** Postgres	All MPS Applications and Services except few	Admin and User roles. Admin roles is for Paladin Admin Users only. User role is for Application and Service User to define and configure policies.	https://rndwi ki.inc.hpicorp. net/confluenc e/display/MP SSServiceDeliv ery/Paladin
Data as a service	Enablement service	The Enablement Service in the context of "Data as a Service" (DaaS) is designed to address the challenges of data orchestrati on and integration with multiple heterogeneous data sources. It provides a flexible querying capability on fleet data across various data sources such as K2, ITSM (ServiceNow), and the Usage service. The Enablement Service leverages technologies like GraphQL, Hasura, AWS Appsync, and AWS Glue to facilitate this pro cess. The service is utilized by multiple microservices within the Service Delivery ecosystem, handling large volumes of API reques ts with good latency. As of the latest information, around 1 million queries are made every day in production, indicating the service's robustness and scalab ility. The Enablement Service architecture includes components for authentication and authorization (Paladin), data caching (Hasura + PostgreSQL AWS RDS), data orchestration (AWS SNS, SQS, Lambda), and ETL processes (AWS Glue) for preloading data into the cache. This architecture supp orts the efficient management of data needs for various applications and services within HP's ecosystem.				
Customer Portal (device view, request for service/supplies, reports)	Device control center (DCC) WEX	The Device Control Center (DCC) is the interface that allows customers to view their fleet, take actions on devices, and gath er on-demand data for Managed Print Services contracts. It is designed as a navigable customer interface and order fleet management portal, providing real -time fleet status and locations with integrated maps, graphs, and charts. Customers and partners can log in to DCC to manage fleets and modify device details such as site and building. DCC also tracks devices that have not been reported for the past three days and displays this information in the DCC UI. Key features of DCC include: • Customer/Partner dashboard • Fleet and Map view • Service call requests for onsite support • Reporting • Supply orders • Device details management DCC supports different user roles, controlling the actions that can be performed on devices. It is accessible from any browse r at the designated URL provided by HP. The account setup is automated, allowing partners and customers to instantly access and see fleet information, removin g manual tasks in the creation of the account for new CBA deals. For any changes or migrations, such as the endpoint switching of Enablement Service to Tropos on the production stack, DCC en sures that users are set up so they can manage their account and fleet post-migration. This includes sending active customer user information to DCC for user setup. DCC is integrated into the HP MPS Tool Sets and can be accessed through industry -leading third-party ISV tool sets or through portable SDS APIs for strategic reseller engagements. WEX, in the context of HP, refers to the **Workforce Experience** platform. It is designed to transform IT for the workforce by tracking, measuring, and improving the employee and technology experience. WEX enables organizations to gain insights into digital friction that reduces product ivity and captures employee sentiment regarding their technology experience across a company's fleet of devices, including PCs, print, and more. It also includes capabilities for software management and workflow & print solutions, expanding print telemetry and metrics into WEX. Additionally, WEX is building a new partner/API program and has out-of-the-box connectors for integration with existing systems like ServiceNow, PowerBI, Tableau, and Quicksite, along with a robust se t of APIs for value-added services, operational efficiency, and tailor-made solutions for clients	• **Frontend:** ○ ReactJS, Veneer ○ AngularJS, Material UI • **Backend:** ○ Node.JS, ExpressJS • **Databases:** ○ MongoDB, DynamoDB • **Additional Tools and Services:** ○ Splunk for logging	• BIRD • ARC • ACE/CDAX • Enablement Service • ITSM • Incident Service	• HP Internal Roles **HP Super User** Portal Admin kind of role. Super User can manage all users including HP, Partner and customer users. View Reports, Manage Partners and Customers. **HP Account Manager** Raise iMACD requests View strategic report View documents View Partner Dashboard **Contract Admin** Approve/Reject contractual change requests. **HP CSM** Manage Customers **HP SDM** **HP Basic User** • Partner Roles **Partner Admin** **Partner Admin Invoice** • Customer Roles **Customer Admin**	
Data collector and Agents for HP and multi-vendor devices	JAMc FM Audit Agent	JAMc, in the context of being a data collector, is part of the HP Managed Print Services (MPS) ecosystem and plays a crucial role in device data collection and management. It works in conjunction with JAM (JetAdvantage Management) to collect device data using Stratus or via vJAMC. Ent erprise devices use Doppler, which in turn uses vJAMC. The device telemetry data collected by JAMc is pushed to the Usage Service to determine if auto -replenishment is needed via FFN and ARC (fulfillment services). JAMc is also involved in the discovery process of devices, where it requires some changes to support the discovery OIDs passe d to the EF library for analysis. If the discovery data matches the EF support rules, the library will return an MV discovery result, and MVLibrary will be select ed as the model support type. The data collector agents, including JAMc, are installed or connected to the printer at the customer location and send usage directly to HP Device Connect. This data is then made available to other systems for operational and billing purposes, such as SDS, which watches event data to predict future part failures.				
Asset management (customers, devices, locations, contacts)	ITSM Service Now	ServiceNow, in the context of IT Service Management (ITSM), offers a comprehensive platform for asset management. It provides capabilities to manage and track an organization's hardware and software assets, maintain an inventory of products, manage licenses, track procurement, and monitor the lifecycle of assets. ServiceNow's asset management features are part of its ITSM solution, which implements ITIL -based processes. The Configuration Management Database (CMDB) in ServiceNow is a central repository for information about an organization's in frastructure, services, and assets. It stores information about IT assets and their relationships, which is a key component of the Configuration Manageme nt process in ITIL. The CMDB is connected to the Common Service Data Model (CSDM) and the Product Catalog within ServiceNow, allowing for a comprehensive vie w and management of assets. ServiceNow also provides the ability to create custom tables and modules to store and manage product information more effecti vely, which can include creating custom fields, forms, and workflows specific to an organization's asset management needs. For example, the Managed Collaboration Service – NSI Architecture document mentions that ITSM receives the master agreement from TMC/Broker and correlates the solution to product catalog definitions, filling in the customer experience catalog so customers can make requ ests entitled to their rooms. ITSM also publishes the experience catalog to the customer ITSM and WeX portal, allowing customers to make appropriate requests ba sed on their Statement of Work (SOW). Additionally, ITSM uses a Transition project management module to manage the install project for customers, lever aging workflows from DaaS and MPS to process installs.	ITSM Service Now, AWS SNS	TMC, Broker, MOUS, ES, BIRD, DCC, Usage Service	Admin, Contract Administrator, Fleet User	
Case management (case life cycle management, technician management, field break fix service, parts inventory/consumption)	CDAX	CDAX, in the context of case management, is a custom version of Microsoft Dynamics CRM designed for HP Customer Support. It i s implemented across Commercial and Consumer touchpoints, including Remote Case, Chat, Call, and Field Services. CDAX links to over 50 existing HP IT assets, ranging from supply chain and master data to finance, analytics, and reporting. It provides real-time reporting capabilities and analytics with a new Microsoft Power BI interface. CDAX is part of the 360-degree customer experience, offering value to customers by reducing the need to repeat information and providing a consistent experience across support channels. For HP, it offers a comprehensive customer view, improved customer relations, and agent e fficiency gains from a consolidated CRM environment. It also optimizes the utilization of Field Engineers and has enterprise capabilities like real -time data and dashboards . CDAX is also involved in the case creation process, ensuring that cases contain complete and accurate information relevant fo r GSS operations and are available for dispatching to the appropriate queue as defined in the metrics. The case creation process in CDAX is governed b y specific procedures to maintain the quality and efficiency of support services.				
Entitlements (contract management, SLA definitions, offer definitions, obligations definition) Billing and Invoicing	MS4 S4 BRIM Convergent Charging Convergent Mediation Obligation service	MS4 in the context of CBA (Contract Billing Automation) is involved in the replication of master data to the CBA application. Specifically, it replicates person and customer master data from MS4 to the CBA application via PI/PO and Broker. The CBA application receives this master infor mation using outbound webservice messages. This process is real-time, and MS4 sends single messages at a time to the CBA application via PI/PO and Broker. The service provided by the Broker by PO is to consume the XML. This replication is crucial for maintaining accurate and up -to-date master data within the CBA ecosystem. Additionally, MS4 is mentioned in the context of BPID (Business Partner ID) automation, where it is involved in the creation of automated BPID and supports VAT ID support. This is part of the release plan for improving the efficiency and automation within the CBA system. For any planned downtime or maintenance activities that affect MS4, users are notified in advance to plan their activities ac cordingly, as seen in the notifications sent to CBA stakeholders. In the context of CBA (Contract Billing Automation), S4, which refers to the SAP S/4HANA system, is a part of the end -to-end ecosystem that supports the billing and invoicing processes.S4 is also mentioned in the context of sales contracts, where it houses various customer cont ract attributes such as CBN number, validity date, customer name, address, partners, payment terms, shipping information, billing information, tax detail s, and more. These attributes are editable and are part of the S4 Sales Contract, which is a type of Outline Agreement in SAP. In SAP, a **contract account** is associated with a customer and is used for billing and payment processes. It represents the financial relationship between a service provider and a customer[1]. A **master agreement** is a contractual agreement between HPI and a business customer, defining fundamental elements and conditions for dependent individual contracts (provider contracts). It also sets rules that govern the business activity arising from these individual contracts[2]. A **provider contract** is a special sales order used to sell product bundles consisting of physical products and services. It is a long -term agreement based on specific terms negotiated beforehand, detailing how and when the customer will be charged for access to or consumption of goo ds and services. These components are indeed part of SAP systems, as they are integral to managing long-term business relationships, invoicing, contract accounts receivable and payable, taxation, and correspondence processing within the SAP framework A contract account is typically a customer account that is used for billing and payment processes. It represents the financia l relationship between a service provider and a customer. A master agreement, also known as a framework agreement, is a contract reached between parties, in which the parties agree to most of the terms that will govern future transactions or future agreements. A master agreement allows the involved parties to negotiate future transacti ons or agreements more quickly because they can rely on the strong foundation of the master agreement for future business. A provider contract is a specific type of contract under a master agreement that outlines the terms and conditions under whic h services or goods are provided by one party to another. The provider contract details the specific types of services or goods provided, the obligations of e ach party, the payment terms, and other conditions specific to the agreement. For instance, the Master Agreement Automation For Managed Page Deals and Provider Contract Automation For Managed Page Deals are recent projects that aimed to automate the creation of these contracts, reducing the onboarding proces s time from days to minutes[2]. If you need more detailed information or specific documents related to these terms, I can assist with that as well. A SAP offer SKU refers to a specific Stock Keeping Unit (SKU) that is part of the SAP (Systems, Applications, and Products in Data Processing) software offerings. It is a unique identifier for a particular product or service available for purchase. The SKU is necessary because it helps i n tracking the inventory, managing the sales, and analyzing the product performance within the SAP system. It is particularly important for businesses as it allows for the efficient management and procurement of SAP software products and services, ensuring that the correct versions and quantities are purchased and used. In the context of Managed Print Services (MPS), which seems to be relevant to your profile, SAP offer SKUs would be used to i dentify specific paper services, commission fees, adjustments, and other related services. These SKUs are essential for billing and service management, ensuri ng that customers are charged correctly for the services they receive and that providers can accurately track and fulfill service commitments. The ODM structure, in the context of HP, refers to a data model that includes Offers, Deliverables, and Modifiers. It is a co mprehensive structure that allows for multiple deliverable records, modifier records, and modifier value records, making it a superset structure that can model both traditional SKUs and K-MATs. However, the ODM cannot be properly modeled in either of the other structures. It is used to describe individual entitlements associated with an offer, such as break-fix service, supplies, installation of hardware, etc., and is understood by ITSM and S4/BRIM for their functions and workflow s. The ODM structure is essential for creating deals, as it combines catalog information with quote information to form the final deal information. I t is also used in the DART deal structure, which is exposed by the DART TTSAP* APIs used by TMC to read the deal info. For example, the ODM structure allows for the definition of services using atomic elements, which can be organized in a way w ith associated asset prices (HW/SW Sales, Lease) and is crucial for the flow of quote data to the contractual ecosystem. It is also involved in the proce ss of converting a quote into a deal structure, especially in scenarios where the DART deal structure is not present.				

The TTSAP API package, as mentioned in the context of HP, is a package generated by the Deal Management Service (DMS) after successful deals in MPC (Managed Print Cloud). This package is used by TMC (Transition Management Central) to onboard an MP Flex deal. The TTSAP package plays a critical role in managing the first and last steps of the CPQ/Subscription End-to-End (E2E) Process, effectively acting as the bookends in the overall process[1].

The TTSAP output package from DART is used by TMC to prepare the MA payload, and TMC expects the same output package from the Enterprise Catalog (EC). The requirement for EC is to provide an API that gives a similar output as the DART TTSAP package, which is based on XML, but EC should follow JSON. This package includes details that are crucial for the transition management process, such as the TCV of the deal in USD, which is needed for credit checks, and various other components and data points necessary for the deal's lifecycle.

BRIM, which stands for Billing and Revenue Innovation Management, plays a crucial role in the context of CBA (Contract Billing Automation). It is part of the end-to-end business process within HP's ERP system, focused on key business processes and enhancing the customer/partner experience. BRIM is responsible for the billing and revenue management aspects of CBA, ensuring that billing sources are consolidated and invoices are created accurately.

In the CBA ecosystem, BRIM works alongside other tools such as ITSM, DART, TMC, and S4 to automate order acceptance, orchestrate orders, manage product ordering and shipment tracking, and handle installation and billing processes. It is involved in the creation of billable items, consolidating multiple billing sources, and is the point where the invoice is created in the CBA process.

BRIM also interfaces with other systems like DCC and MS4, playing a part in the overall management of service contracts, customer support, procurement, and logistics, as well as supporting processes to deliver successful support and services to HP customers.

For any specific issues or gaps identified in the CBA process, such as mapping for contracts with in-advance billing or the reconciliation process for Safecom customers, BRIM's functionality is crucial to address these challenges and ensure accurate invoicing and revenue recognition.

OMS in the context of CBA refers to the **Order Management System**, which is a key component in managing customer accounts, particularly in the Managed Print Services (MPS) and Managed Document Services (MDS) domains. It is involved in the IT Service Management (ITSM) process, managing incidents, changes, and other customer account activities (IMACDs - Install, Move, Add, Change, and Dispose). OMS 3.0 is a project that focuses on data transformation, aiming to integrate data from various disconnected systems and domains such as services, sales, customer, contract, finance, and service delivery into a unified data model. This integration facilitates the creation of standardized and reusable data products that can be used across different applications within the business process value chain

The OMS is integrated with the go-forward master data dimensions in the FDL (Foundation Data Layer) and is part of the Managed Services Bid Assessment Data Product consistent with the DBIA (Data Business Intelligence Architecture) Data Product Strategy. This integration is crucial for ensuring that data is consistent, reliable, and can be used effectively for business intelligence and non-BI applications, such as CSM (Customer Success Manager) tools

In the context of SAP and BRIM, CC refers to **Convergent Charging**, which calculates the price of events that represent what the customer has consumed when using a service. The output from SAP CC are charged items that are sent to SAP Convergent Invoicing as billable items. Additionally, chargeable items can be stored in the S/4Hana database as consumption items.

CM, in this context, is likely to refer to **Convergent Mediation**, which collects events from different network elements, enriches them with the data needed for rating and billing, and sends the events as chargeable items to SAP CC.

These components are part of the SAP BRIM (Billing and Revenue Innovation Management) solution, which drives the billing generation and revenue recognition for services.

In the context of CBA (Contracts & Billing Automation), the terms IPSO SAP, O&C, and iGSO refer to different components within the billing and contract management ecosystem:
- **IPSO SAP** refers to legacy SAP platforms used for billing and invoicing processes. The CBA migration plan aimed to migrate all MPS (Managed Print Services) and PS (Print Services) contracts out of these legacy platforms by a certain deadline to enable legacy retirement and data center exit.
- **O&C** stands for Order and Contract. It is a system used within HP for managing orders and contracts. In the context of CBA, it is mentioned in relation to the migration of MPS and DaaS (Device as a Service) from O&C to the new CBA ecosystem[34]. The migration from O&C is a part of the CBA's effort to automate up to 70% of today's manual contract setup and invoicing, eliminating manual data entry points.
- **iGSO** stands for Global Spares Operations. It is an enterprise-wide costing application system used to calculate and manage standards for valuation of HP's spare parts inventory. iGSO contains the official standard costs and cost-related information needed by downstream systems for valuing inventory and placing a cost value on a transaction. It is mentioned in the context of service-related cost management within the CBA ecosystem.

These components are integral to the CBA's goal of automating and streamlining the billing and contract management processes, ensuring timely and accurate transfer of accounts from legacy systems to the CBA ecosystem If you require more specific details or have further questions about these components and their roles within CBA, please let me know, and I can assist further.

In the context of CBA, which stands for Contract & Billing Automation, "obligation service" refers to a mechanism for reporting managed service device-level entitlements. It is part of the provider contracts, which are the core mechanism by which SAP bills device-dependent provider contracts. The Obligation Service ensures that the provider contracts have all the data required for the device and is essential for maintaining data integrity and consistency across the system

Sales (direct/partner/channel, opportunity management, CPQ process, Win agreement, SOW, signing, deal management)	HP Dynamics (sales opportunity) Deal Analysis Response Tool (DART CPQ system) Managed Print Central (Partner sales tool) Price Hub		Technical Stack of MPC/MP Flex:	Integration Points of MPC :	The various user roles in Managed Print Central are quite diverse and cater to different aspects of the service.

HP Dynamics, in the context of CBA (Contract Billing Automation), is a sales platform that delivers more than relationship management. It enables a new paradigm for how work is done together, particularly in sales processes. It is recommended to use Chrome as the browser for optimal performance of HP Dynamics

In the CBA ecosystem, HP Dynamics is integrated with other systems like DART and TMC (Transition Management Central) to automate configure, price, quote, onboarding, contract management, and billing. This integration allows partners to onboard their accounts with more autonomy, especially in the US, and Transition Managers to onboard accounts with more structure and control, ensuring data quality

HP Dynamics also plays a role in the creation of opportunities, where all opportunities are created, and pricing is finalized in DART, which remains the pricing tool. The system is designed to provide a seamless experience from onboarding to service and support, making it easier to manage customer accounts and bill consistently across the enterprise[2].

For any specific issues or gaps identified in the CBA process, such as mapping for contracts with in-advance billing or the reconciliation process for Safecom customers, HP Dynamics' functionality is crucial to address these challenges and ensure accurate invoicing and revenue recognition

DART, the Deal Analysis Response Tool, plays a significant role in the context of CBA (Contract Billing Automation). It is used for creating CBA-compliant deals, ensuring that contractual deal data can move through various systems over the deal's lifetime. The tool is capable of creating deals that are directly billable in the new SAP S4 module, which is part of the CBA ecosystem[1].

DART is involved in the pricing process, where all opportunities are created, and pricing is finalized. It is also responsible for SKU mapping and deal pricing within CBA, addressing issues related to specific SKUs and pricing deals. Additionally, DART deals with the replication of master data to the CBA application, ensuring that the master data is accurate and up-to-date.

For contracts with in-advance billing, DART mapping is crucial. If there's a gap in the mapping for such contracts in CBA-TMC, it is necessary to set up the mapping before onboarding the DART into TMC. DART also contributes to the onboarding process, which includes tasks and activities for account pricing and setup of customer/fleet data within tools like DART & TMC (Transition Management Central)

The Managed Print Central (MPC) tool in the context of Contract Billing Automation (CBA) is a web-based application that enables partners to create and manage contracts for CBA customers. It facilitates device onboarding, pricing, and billing for CBA contracts. Specifically, MPC is used to convert legacy customers to CBA and archive their old proposals and opportunities.

MPC is integrated with other systems like DART and TMC (Transition Management Central) to automate configure, price, quote, onboarding, contract management, and billing. This integration allows partners to onboard their accounts with more autonomy, especially in the US, and Transition Managers to onboard accounts with more structure and control, ensuring data quality

Price Hub is a new deal management platform at HP that enables collaboration across the company to create, approve, or reject prices and discounts in deals. It is designed to replace the 25-year-old Eclipse system and transform the way deals are managed. Users from CSSM, ISR, and sales centers will use Price Hub to create deals, while category teams and BidDesk teams will use it to approve discounts in deals. Sales representatives currently using Eclipse will be migrated to Price Hub, and onboarding plans for sales are still being prepared.

Price Hub offers a modern user experience for deal creation and management, allowing users to customize their experience based on their deal management role, get guided by notification messages, export data with all deal information, set home page preferences, and share user preferences with other users. Additionally, there have been reports of increased OPG fallout cases where Price Hub asset is returning defects or limitations affecting the OPG state or SKU elements part of the deal. To address this, daily war room sessions have been set up with participants from Price Hub, MPC, and Partner Experience teams to identify root causes and build up solution planning.

For any specific queries or further details about Price Hub, feel free to ask.

Technical Stack of MPC/MP Flex:
- **Frontend:**
  - Angular for single page applications for each of the business models like - PMPS, SMPS etc.
- **Backend:**
  - .NET Core for API hosts that provide backend functionality
- **Databases:**
  - Postgres SQL and SQL server
- **Additional Tools and Services:**
  - SNS/SQS for messaging
  - WS02/integration service for integration services
  - ECS for container orchestration
  - Amazon RDS for database hosting
  - CloudFront and S3 for UI and artifact distribution
- **Core Stack:**
  - Angular, .NET Core, Redis, SQL Server, AWS, and other cloud and messaging technologies

Integration Points of MPC :
- **CBA Interface:**
  - Connects to the CBA system through WS02/integration service for handling onboarding and other data processes.
- **Managed Print Central (MPC):**
  - Integrates with MS Dynamics, Apollo, and MS4 for customer and partner management.
  - Utilizes DC/JAM and UDA for device management.
  - Interfaces with Eclipse /Price hub for pricing and DCC for providing information about devices under contract to partners and customers.
  - Connects to TMC for transition management and uses Broker for workflow integration.
  - Leverages ECP and Stratus for additional services and functionality.
- **API Endpoints:**
  - Exposes APIs for onboarding, sponsor management, SMPS, and EDP.
- **Data Handling:**
  - Uses Amazon RDS for data storage and workflow services for process automation.

Here's a summary of the roles based on the information available:
- **Administrator**: Responsible for overall system administration, including user management and configuration settings. They have the highest level of access and control within the system.
- **Business Manager**: Focuses on the business aspects, such as contract management, billing, and reporting.
- **Basic User**: Has access to basic functionalities of the system, likely related to their specific job functions.
- **Sales Representative**: Engages with customers, manages sales-related activities, and uses the system to support sales processes.
- **Sales Manager**: Oversees the sales team, tracks sales performance, and ensures the alignment of sales strategies with business objectives.
- **Analyst**: Analyzes data and generates reports to support decision-making processes.
- **Account Manager**: Manages customer accounts, ensures customer satisfaction, and identifies opportunities for account growth.

These roles are designed to ensure that each user has the access and capabilities needed to perform their job effectively within

Pre-sales (fleet assessment, fleet design)	Portico	The Portico tool in the context of CBA (Contract Billing Automation) is a cloud-based application that serves as a fleet design and asset utilization tool for Managed Print Services (MPS). It is used to understand, visualize, and optimize current state print environments through every phase of the MPS lifecycle. Portico allows users to perform discovery by walking the floors and entering data directly into the tool, replacing the need for paper or spreadsheets. It is capable of integrating with downstream pricing tools like BIRD, DART, and TMC, and is also useful as a deployment tool.
		Portico supports two types of projects:
		• **Bottom's Up**: This allows users to consolidate, replace, retain, remove, and move pages within the Current Mode of Operation (CMO) to the Future Mode of Operation (FMO) using a Map or a Tabular view.
		• **Prescriptive**: This type of project allows users to upload an existing design to create DART deals
		Portico is available to all HP employees and partners, providing a comprehensive tool for managing and optimizing print environments as part of the CBA program.
			• **Frontend:**
			  ○ angularjs (Angular migration in progress)
			• **Backend:**
			  ○ Node.JS, Python, PM2, Redis
			• **Databases:**
			  ○ MongoDB, MySQL
			• **Additional Tools and Services:**
			  ○ Elasticsearch
			  ○ Kibana
				• **DART**
				Prepares a DART deal script and upload it for deal creation and fetching prices.
				• **TMC**
				Imports BoG from TMC by TMC project-id.
				Exposes one API to TMC for site design import into TMC.
				• **BIRD, FleetOps**
				Integrates with these APIs for the import of assets data.
					Managed Print Central.
					Integrated with Paladin.
					HP Employee, HP Partner, Direct SignIn: Project Creation, Fleet Assessment and Design
					MV Coordinator: Special user having access to upload Multivendor project to DART for deal creation.
					Admin: Impersonate user for troubleshooting

Transition management (Deal to contract, hardware ordering, hardware tracking, deployment, management, onboarding)	TMC Broker Deal management service (DMS)	Transition Management Central (TMC) is an existing tool within the CBA (Contract & Billing Automation) ecosystem that is mandatory for the onboarding of DaaS (Device as a Service) deals. It is used to manage the transition to account/contract management through service delivery, replacing MPS legacy infrastructure and processes. TMC handles tasks such as creating Master Agreements, which represent contractual agreements between HPI and business customers, and storing controlling data for long-term business relationships in Contract Accounts. This data influences processes in invoicing, receivable and payable, taxation, and correspondence processing TMC is also involved in addressing gaps between legacy systems and CBA-TMC regarding submitting hardware orders, streamlining the ordering experience, and improving operational efficiency. It is part of the effort to optimize processes and systems, aligning with the experience in TMC legacy and reducing reliance on legacy systems The Broker tool in the context of CBA (Contract Billing Automation) acts as a workflow engine for onboarding data and serves as a bridge between TMC (Transition Management Central), SAP, and ITSM (IT Service Management). It is based on AWS step functions and is responsible for pushing contract information to SAP and fleet information to ITSM. The Broker tool ensures the smooth transition of data between these systems, facilitating the onboarding of new contracts, accounts, and devices within the CBA ecosystem. For instance, once device serial numbers are available, they are shared with all other assets in the ecosystem. The Broker tool also plays a role in pulling deal information from DART (Deal Analysis Response Tool) and transferring them into contract information using the TMC broker into ITSM. This process is crucial for maintaining the integrity and consistency of data across the CBA platform. The DMS tool, or Deal Management Service, is a platform used for managing deals after they are successfully closed in the Managed Print Cloud (MPC). It is crucial for the onboarding process of MP Flex deals, as it generates a TTSAP API package that Transition Management Central (TMC) uses to onboard these deals. The DMS tool is part of the first and last steps of the CPQ/Subscription End-to-End (E2E) Process, effectively serving as the bookends in the overall process			
Business intelligence (data repository/Lake, operational insights, AI driven data products)	BIRD (BI Data repository)	BIRD, in the context of CBA, appears to be related to the Business Intelligence Reporting Dashboard or Tool, which is used for various reporting and data management tasks within the CBA ecosystem. It is involved in activities such as invoice and reporting solutions, deployment and DevOps support, QA for production and non-production environments, and bug fixes. Additionally, BIRD is mentioned in relation to CBA Migration Support, suggesting it plays a role in the migration process by providing reports and supporting data reconciliation.			

Fleet operations (device manageability, remote configuration, fleet policies, proactive management, remote monitoring services)	Fleet Ops
	
	DCMC
		The Fleet Operations Tool in the context of CBA (Contract and Billing Automation) is a comprehensive system that assists with various aspects of device management. It allows for viewing incidents for a device to help identify potential issues and perform remote operations on a device to aid with diagnostics and remediation. These operations can retrieve both historical data from the JAM database and live data directly from the device. Once an operation is triggered, the details such as status, who triggered it, start date, and more details will be available in the history to track the operation.
		
		The Fleet Operations Tool in the context of CBA (Contract and Billing Automation) is a comprehensive system that assists with various aspects of device management. It allows for viewing incidents for a device to help identify potential issues and perform remote operations on a device to aid with diagnostics and remediation. These operations can retrieve both historical data from the JAM database and live data directly from the device. Once an operation is triggered, the details such as status, who triggered it, start date, and more details will be available in the history to track the operation
		## Features and capabilities
		Support Diagnosis
		  ○ Device Event Log
		  ○ EWS
		  ○ View Support Cases
		Support Case Management
		  ○ Log Support Cases
		Proactive Alerting
		  ○ Proactive Alerts
		  ○ Predictive Alerts
		  ○ Report a Problem Alerts
		Remote Configuration Management
		  ○ Device Reboot
		  ○ Device Configuration - Single Device
		  ○ Firmware Management - Single Device
		NRD
		  ○ NRD
		Consumable View
		  ○ Consumable Levels - View
		  ○ Consumable Orders - View
		Consumable Management
		  ○ Consumable Ordering
		  ○ Consumable Level - Set
		Connectivity Management
		  ○ Device Connectivity Management
		  ○ Communication Group Creation & Management
		  ○ Credentials for Communications
		  ○ Discovery
		Fleet Management
		  ○ General Group Creation & Management
		  ○ Device Credential - Set
		  ○ Cartridge Access Control - Set
		  ○ Report a Problem - Set
		  ○ Supplies Policy - Set
		  ○ Security Policy - Set
		  ○ Firmware Management - Fleet
		  ○ Device Configuration – Fleet
		Job Approval
		  ○ To Approve the Jobs, which requires approval.
			• **Frontend:**
			  ○ ReactJS, Veneer
			  ○ AngularJS, Material UI
			• **Backend:**
			  ○ .net Framework4.8, .net core, WebAPI, nodejs
			• **Databases:**
			  ○ MS SQL, Postgres
			• **Additional Tools and Services:**
			  ○ Splunk for logging
			  ○ WSO2 for NRD workflow execution for auto remediation.
				• BIRD
				• Usage Service
				• ITSM
				• K2
				• K2 Publisher
				• Enablement Service
				• Device Connect
				• JAM/SDS
				• ARC
				• STS
				• Methone
				• Insights
					• Portal Admin (PA)
					• CS – Level 1 (CCT-L1)
					• CS – Level 2 (CCT-L2)
					• Fleet & DCMC Management (CA)
					• Fleet & DCMC View (CO)
					• Customer Manager (CM)
					• Partner Break Fix (Partner-L1)
					• Partner Fleet Management & DCMC(Partner-L2)

Deal documentation storage	Deal source	"Deal Source" in the context of CBA (Contracts & Billing Automation) appears to be a platform based on SharePoint that provides storage capability for deal documentation, business intelligence, and workflow automation for various processes such as Handover (OA), Procurement, IMACD (Install, Move, Add, Change, and Dispose), Lease Initiation & EOL, and Standalone Service processes. It is used for more than 1500 deals and manages over 1700 handovers. With the new CBA solution, Deal Source will continue to provide central document repository capability as well as Handover workflow to other systems like TMC (Transition Management Central) and DCC for data flow continuity. Business Intelligence reports regarding Deal Source activities and handover related process steps are still provided.			
Others		The Digital Services Manager (DSM) in the context of HP is a platform that provides a comprehensive suite of services for managing deals related to digital services. It includes functionalities such as financial summaries for resellers, customer and reseller acceptance processes, quote generation, and agreement management. DSM allows for the management of subscription prices, device services, and customer reporting, and it supports usage analytics and business reporting. It is also involved in the governance of Managed Print Services (MPS), providing support and services to optimize the print environment for DSM's customers. DSM is integrated with HP's Digital Services platform, which includes a dashboard for managing quotes, customer statuses, and next steps in the deal process. It offers a rate card for resell agents and has admin settings for bundle management, providing a range of services from fleet management to telemetry services. The platform is also mentioned in the context of training and certification, indicating its role in the professional development of employees within the digital services domain. In the context of CBA, K2 is associated with customer and device onboarding processes. It is involved in setting up customers and onboarding devices for new K2 customers, both when a DCA (Data Collection Agent) is installed in the presales phase and when it is not. For existing K2 customers, K2 facilitates the onboarding of contracts and devices. The system also plays a role in the CBA migration plan, where it is used for the migration of accounts from K2 to CBA. Additionally, K2 is referenced in the context of supply management processes within CBA, where it is used to execute proper shipment rules when an end customer needs to use different stationers for devices installed at the same location. Moreover, K2 is mentioned in relation to the Supply Routing ID, which is an identifier in CBA for the customer to be used in the "Supply Management" processes. This ID helps to systematically execute the proper shipment rules			