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Case Studies
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Editorial Documentation and Document Management System

Summary

- Easily composable and searchable Document Management library with multiple versions along with proofread, approve, publish, authoring frame-work

Customer Profile

- Indian Express, the large newspaper industry in India

Challenges

- Different Document Types
- Too many categorizations
- Scanned Images
- Different Document versions
- Different Indian languages like Dinamani, Andhra Prabha etc.

Solution

- CVS version control
- Tesseract OCR
- Full text Search
- Keyword Tag Search
- ISCII storage
- PostgreSQL
- Rich text editor
- Pagination, Collaborative editing
- Twain scanners

Result

- Removed totally paper library and manual paste-up department
- Shortened publish time by 50%
- Increased readers' space
- Engaged Employees
- Cut down cost by 80%

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SMS Alerting System for Traffic Violation

Summary
- Sending SMS who violate traffic rules such as wrong way drive, prohibited lane changes, speed limit and crossing while red light, through cameras by identifying vehicle number
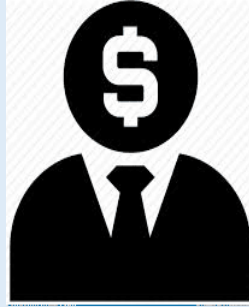
Customer Profile
- Wara, IT consultant for Ministry of Interior, Kuwait-subcontract from Cherrytec, Chennai

Challenges
- Capturing a speedy vehicle
- Mix of Arabic Numerals and Indo Arabic Numbers
- SMS should be sent in Arabic or English based on demographics
- Low Night vision

Solution
- 1 camera monitors 3 lanes concurrent
- Synchronized IR Laser Flash at night
- 3D Radar for position, speed
- Manhattan and Canberra Distance calculator
- MTC, Kuwait for SMSC gateway

Result
- Revenue increased by 40%
- Stop sign violation and wrong way drive brought near to 0% from 20%
- Accident rate reduced by 30%

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DICOM SR VIEWER

Summary

- Online software model for desktop, mobile and tablets, in a single login environment to view DICOM images and SR Reports in offline mode

Customer Profile

- Toshiba Medicals, Japan based customer manufacturing CT, MRI, PET, CTPET machines

Challenges

- Connectivity to DICOM Network to download files
- Adherence to DICOM Imaging Security policies
- Complex standards
- Complex templates
- Different modalities have different templates

Solution

- SOA
- 2 Pass Parser
- Code name Customizer
- Single Sign On
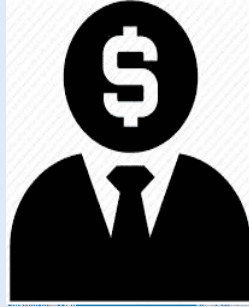- Dcm4che, Dvtk Kit
- NEMA guides
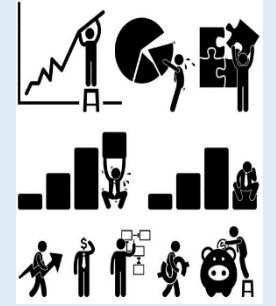
Result

- Faster on the fly viewer
- Increased customer space
- Reduced recurrence cost to maintain software
- One software for all modalities

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ONC CERTIFICATION

Summary
- Get ONC Certification of EMR, PM System

Customer Profile
- US Health care eligible health care provider

Challenges
- Compliance Hurdles:
  - Faced challenges in aligning with the stringent criteria set by ONC
- Interoperability Issues:
  - Encountered difficulties in achieving seamless data exchange between healthcare systems, hindering efficient communication and patient care coordination.

Solution
- Interoperability Emphasis with FHIR
- Patient-Centric Design and dynamic Patient portal
- Meaningful Use Integration
- ISO 27K, ISO 9001
- Auto correction with Rule based engine
- ATNA Audit Trail and Reporting

Result
- Reduced Re-admissions
- Efficient utilization of beds, operating rooms, equipment, staffs
- RCM streamlined cashflow
- Quicker Clinical Decisions
- Connected Care

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CLINICAL CONTENT QUALITY EDITOR AND SCORECARD

Summary
- Build a Clinical Content Quality scorecard
  - Load clinical content in the tool
  - Deploy clinical content evaluation criteria
  - Execute clinical content evaluation algorithm
  - Present Clinical content dashboard
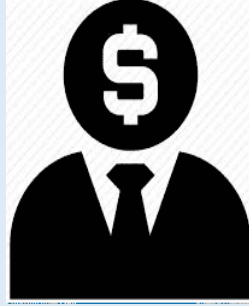
Customer Profile
- US Health care eligible health care provider

Challenges
- Content Standardization
- Timely Updates
- Interoperability Gaps

Solution
- Automated Content Validation
- Tree bank algorithm
- Tableau
- Rule based validators with medical dictionary

Result
- Interactive editor with alerting user for wrong entries and auto suggest words
- Final Score card display for doctors to input missing information

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Healthcare Business Intelligence And Data Analytics

Summary
- ONC Certified EMR, PM System and AI for improving efficiency, effectiveness, Health status and Patient safety
- Turn data into assets that provide results in real time

Customer Profile
- US Health care eligible health care provider

Challenges
- Legacy Systems and FHIR enabled systems
- Complex Data-Health, Finance Standards
- Payers Follow-up
- PHI
- Life sensitive
- Physicians Availability
- Patients Cancellation
- Manual Prescription
- Paper Records

Solution
- Tableau
- RPA
- HL7 integration
- Value care system
- Correct KPIs
- Rule engines for Data quality assurance
- DMAIC process
- UCD and SED for CX
- EMR, PM, RCM

Result
- Reduced Re-admissions
- Efficient utilization of beds, operating rooms, equipment, staffs
- RCM streamlined cashflow
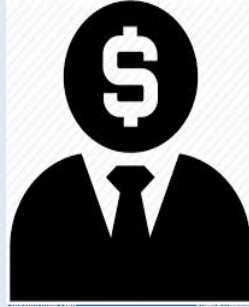- Quicker Clinical Decisions
- Connected Care

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PMO Business Intelligence and Data Analytics

Summary
- Monitor PMO activities
- Take instant decisions
- Re-prioritize projects and resources

Customer Profile
- gloStream DBA TRIARQ health practices, a healthcare consulting firm

Challenges
- Simultaneous projects
- Different backlog channels
- No single point of status

Solution
- MS Project Online
- Power BI
- Predictive Analytics for Projects and Resources
- Business Driver Prioritization
- Projects SLA tracker
- Pareto Analysis

Result
- 100% Resource utilization
- Employee engagement
- One-place dashboard
- Predictive decisions
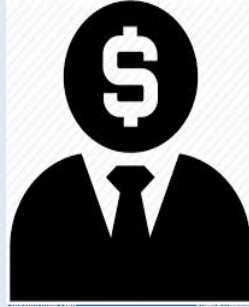- Transparency and improved Employee moral

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Digital Transformation – IT Modernization

Summary
- On-demand healthcare
- Artificial intelligence for precision medicine, medical imaging, drug discovery, and genomics
- Integration of wearable devices

Customer Profile
- US Health care eligible health care provider

Challenges
- Cyber Security and patient data
- The aging population
- Illiterate group
- New gen's changed expectations
- Mobile and wireless, remote healthcare from home
- Complex standards like FHIR and others

Solution
- AI to early diagnosis
- ML in preventive medicine
- BI tools integration
- Automation tools like RPA
- IoT, AR/VR support
- Rule engines for Data quality assurance
- Mobile, Cloud Apps

Result
- Better patient care
- Saved time, improved decisions
- Reduced errors and risks of errors
- Easier to use
- Lower cost
- Connected with other systems
- Digital in-home care with AR/VR

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I2I-ETPCOE

COE

Summary

ETP is an Omni-channel Retail Software company serving market leaders in 24 countries across the Asia Pacific, India, and the Middle East regions. ETP's retail and e-commerce solutions include Omni-channel orchestration, POS, Mobility, CRM, Marketing Campaigns, Promotion Management, Smart Order Management, Supply Chain Management, Product Information and Inventory Management, Marketplace Management, and Analytics. ETP has successfully executed over 500 enterprise software projects for 500+ brands. ETP's unique value proposition is its ability to consistently deliver enterprise-grade Omni-channel solutions to its customers and build long-term strategic partnerships spanning decades.

Engagement

ETP has deployed a Point of Sale (POS) system using an old legacy client-server architecture, incorporating outdated Java Enterprise Beans and employing XSLT transformation for the UI interface. The objective is to migrate this system to a modern Angular application with a Spring Boot REST API, offering the flexibility of deployment either in the cloud or on-premises. ETP is actively seeking partners to collaborate with their team, expediting the development process and facilitating timely releases

Solution

I2I has identified the resources to work with ETP to have right mix of domain sme, technical delivery team, consulting and quality assurance team into 3 CoEs namely R&D , Projects and Consulting CoEs.
In subsequent slides, we have listed down the projects taken by each COE, their problem statement summary, challenges, solution and outcome.

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121-ETPCOE

COE

Top 5 Business Challenges

- Seamless Integration Across Channels – as well as Online and Offline Mode with a unified shopping experience
- Real-time Inventory Management – visible counts accurate across all channels at any given time
- Customer Data Security and Privacy – ensuring compliance with data protection regulations to build and maintain trust
- Dynamic Pricing and Promotions – adapt to market conditions, competitor pricing, and customer behavior
- Consistent Personalized Customer Experience – across various touchpoints, including in-store, online, mobile, and social media

Top 5 Technical Challenges

- Integration with Legacy Systems – with existing legacy systems, including ERP, CRM, and inventory management solutions
- Scalability and Performance – scale to accommodate the growing volume of transactions depending upon seasons and provide consistent performance during peak periods
- Data Synchronization Across Channels – real-time data to provide accurate and up-to-date information on products, prices, and inventory
- Mobile and Contactless Payments – Supporting a wide range of mobile and contactless payment methods securely and seamlessly
- Cybersecurity and Fraud Prevention – protect sensitive customer and transaction data from cyber threats and fraud

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ETP CASE STUDIES

COMMUNICATION PROVIDER INTEGRATOR

Problem Statement

- Develop and implement a robust communication infrastructure that seamlessly integrates with a selected communication service provider.
- Provide support for SMS, WhatsApp, and Email.
- Extendable to accommodate Facebook, Instagram, and Telegram in the future.

Challenges

- Different authentication system
- Different Request End points, Protocols, Parameters
- Different Response status
- Different polling system and session system

Solution

- Selectable authentication system
- Configurable API end points, Protocols
- Mappable Response Status
- Configurable Endpoints of Polling system and intervals

Outcome

- Able to integrate all SMS and Whatsapp providers like Zenziva, Textlocal, Enablex
- Able to Integrate all email service providers like Google, Outlook, AOL

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ETP CASE STUDIES

COMMUNICATION TEMPLATE GENERATOR

Problem Statement

- Develop a versatile and user-friendly system designed for the creation and management of messaging templates adaptable for utilization across diverse communication channels and possess the capability to handle dynamic content insertion with localization support
- Provide support for SMS, WhatsApp and Email

Challenges

- Different templates based on Trigged Events
- Different dynamic variables need to be fetched runtime from databases to assemble the delivery content
- Different message formats for different delivery providers
- Different languages for each customers

Solution

- Selectable events and editable templates in given languages
- Variable Mapper from database fields
- Auto convertor of RTF to Email format, WhatsApp format or Plain SMS format
- Auto picker of language based on customer preference

Outcome

- Able to send messages from all events such as Order Delivered, Invoice Generated, Customer Registered, etc in English as well as local language specifying product details, price details, discount information etc.

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ETP CASE STUDIES

COMMUNICATION DISPATCHER

Problem Statement

- Ensure the dependable dispatch of diverse messages to a varied user base, including customers, vendors, and suppliers, adhering to their specified preferences and on time

Challenges

- At the time of events trigger such as order delivery, communication provider may be having network issues or service outages, or other disruptions
- Ensuring privacy compliance

Solution

- Queuing system with producer of Kafka and Dispatcher system with consumer of Kafka was created
- Polling system written in Kafka retries until it is dispatched and then cleared queue
- Maintained reports of delivery status along with audit logs
- Transferred messages in SSL encryption

Outcome

- Able to deliver SMS, WhatsApp, Email, Digital Receipts on time without failure
- Able to track the messages delivery.

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ETP CASE STUDIES

DIGITAL RECIEPT

Problem Statement

- Develop a Digital Receipt module that generates and dispatches receipts seamlessly from the store to the customer.
- Customers should have the capability to view digital receipts on their mobile devices via SMS and WhatsApp.
- Additionally, they should be able to download or share these receipts with others.

Challenges

- Each store will have different receipt formats
- Each customer will expect the desired information in specific sequences

Solution

- Similar to Communication template, created another template to select header, footer, content with multiple columns
- Reused template library and Kafka dispatcher for this system

Outcome

- Able to configure by the customer receipt with their personalized sequences of information and preferences
- Able to receive, download or share receipts

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ETP CASE STUDIES

EXCEL DATA FEEDER

 Problem Statement

- Establish a data creation mechanism for various imports, allowing for the selection of dynamic hierarchical data based on the current entries inputted. For instance, enable the selection of a city based on the chosen country and state, providing a user-friendly and adaptive interface.

 Challenges

- Customer can not have macros since it is against their domain security policies
- Excel does not have simple selection based on previous entries

 Solution

- Create a recursive table range dynamically and stored in a hidden sheet for selection
- VTable lookup formula was created through Java recursive program
- Created a reusable component which can be accessed in all modules imports

 Outcome

- Able to enter hierarchical data under various modules like product, employee, address for their imports

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ETP CASE STUDIES

PROFILE IMAGE CREATOR

Problem Statement

- Create a system capable of capturing images from diverse imaging devices, providing functionalities for annotations such as rotation and clipping.
- Facilitate the creation of profiles for customers, products, companies, and groups, incorporating the option to associate images with each profile for enhanced visual representation.

Challenges

- Browser based devices capture
- Interactive Images transformation

Solution

- Captured Web cam
- Created an Image editor to crop, rotate, flip, scale
- Provided selection for round and rectangle clipping based on the type of profile needs

Outcome

- Customer profile with default sizing and round cropping is done
- Product profile with rectangle clipping to any size is done with rotation or mirroring to the perfect view
- Company and Group profile is done with default sizing and rectangle cropping

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ETP CASE STUDIES

ADDRESS PICKER

Problem Statement

- Ensure accurate entry of addresses into the system with an emphasis on preventing spelling mistakes, while maintaining a user-friendly interface.
- Additionally, enable the seamless reuse of addresses in the creation processes for Company, Vendor, Supplier, and Customer profiles

Challenges

- Entering street names and the localities in correct spelling
- Entering correct pin code

Solution

- Integrated with google maps
- On fly typing to select street names and exact location on map
- Auto fill of other information such as city, state, pin code etc. is made

Outcome

- Able to save time of data entry
- Able to reduce errors of address feeding of both company, vendor, supplier and customers

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ETP CASE STUDIES

CASH MANAGEMENT

Problem Statement

- Eliminate complexity of Management of cash and cheques, a multifaceted convergence of diverse payment methods, online banking, and physical banking channels, coupled with the involvement of collection agencies in cash and cheque management system of multiple currencies

Challenges

- Realtime Multi-Bank Integration and visibility
- Synchronization of collection agencies
- Bifurcation of Expense details paid by head-quarters and paid by local stores
- Varying currency rates and currency conversion methods

Solution

- Currency rates are stored along with transaction
- Ledger is maintained for cash, cheque
- Payment gateways are opened in SSL encryption in a different window
- Efficient reconciliation system
- Currency exchange rate is configurable according to store and stored along with transactions

Outcome

- Able to maintain collection agency and banking details across all ETP customers
- Able to maintain individual store wise expense and collection details along with currency rates

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ETP CASE STUDIES

STOCK TRANSACTION MANAGEMENT

Problem Statement

- Implement Stock Transfer system that seamlessly integrates across diverse sales channels, encompassing physical stores, e-commerce platforms, and mobile applications.
- Ensure scalability in the system's design to accommodate potential growth in products, channels, and the overall scale of the business

Challenges

- Ensuring real-time synchronization of inventory levels across all channels to prevent overselling or stockouts
- Establishing effective communication and collaboration with suppliers to streamline the supply chain, reduce lead times, and enhance overall efficiency

Solution

- Maintain consistency in product data with Solr search to have fast shopping experience
- Implement barcode and RFID to improve accuracy in tracking and managing inventory levels
- Realtime communication channel is enabled across users

Outcome

- Seamless stock transfer across omni channels
- Effective communication between users across system users

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ETP CASE STUDIES

STOCK TAKE HANDLER

Problem Statement

- Develop a streamlined and uninterrupted stock-taking operation that spans all channels, encompassing both physical stores and online platforms. The system should prioritize data integrity, effectively preventing discrepancies and ensuring accuracy throughout the stock-taking process

Challenges

- To temporarily freeze real-time inventory updates, Concurrent transactions across all channels
- Ensuring the suspension of all transfer, selling, and buying transactions
- Strategies to minimize system downtime

Solution

- Implement barcode and RFID to improve accuracy in tracking and managing counts
- Realtime communication channel is enabled across users
- Efficient processes for reconciling inventory counts post-stock take, identifying and addressing any discrepancies

Outcome

- Able to save time of data entry
- Able to reduce errors by barcode and auto reconciliation routines

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ETP CASE STUDIES

IN-STORE AND AISLE CATALOGUE

Problem Statement

- Omnichannel retail store, operating across physical and digital platforms, faces a critical challenge in presenting a unified and user-friendly store catalog to customers which lacks cohesion, making it difficult for customers to seamlessly navigate, explore, and make informed purchase decisions across various channels.

Challenges

- Inconsistent Product Information across different channels
- Limited Product Discoverability due to current catalog structure does not effectively showcase the breadth and depth of the product offerings
- Adaptability to Diverse Devices since existing catalog not optimized for various devices

Solution

- Standardized the attributes across stores
- Centralized product balance table maintained to get real time inventory, price, promotions
- Intuitive HTML5 responsive catalog is made for each item and browser made for variants lookup
- Communication channel is enabled across users

Outcome

- Improved the user interface for the catalog to ensure an intuitive and visually appealing experience, regardless of the device or channel used by customers.
- Implemented strategies to easily find, compare, and explore the diverse range of offerings.

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ETP CASE STUDIES

CLIENTELLING

Problem Statement

- Show aggregated Customer data from multiple channels for a comprehensive view of various touchpoints such as in-store purchases, online orders, loyalty programs, and customer service interactions.
- Handling and analyzing real-time data to provide immediate insights into customer behavior and preferences

Challenges

- Utilizing customer data to provide personalized experiences, product recommendations, and targeted marketing campaigns
- Creating meaningful customer segments based on demographics, purchasing behavior, and other relevant criteria.

Solution

- Integrated graphs and chart components to visually interact with axis points and filter of data points
- Created an algorithm to update real time all the formula such as frequency of purchase, last time purchase etc so that there is no wait time to calculate

Outcome

- Presented charts and interactive graphs to look at various ranges and filters.
- Developed segmentation strategies to tailor marketing efforts and promotions to specific customer groups.
- Leveraged historical customer data to predict future trends, preferences, and purchasing behavior.

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ETP CASE STUDIES

RETROFIT

Problem Statement

- Given time constraints, ETP aims to integrate new features into the older version of the application, ensuring backward compatibility and functionality enhancements without necessitating a full system upgrade

Challenges

- Understanding of old database structure
- Menu IDs, Sub menu IDs won't match
- Labels, help texts and messages IDs won't match

Solution

- ID mapper created from excel to replace old ID
- Manual test cases execution to find out any breakages and correcting them

Outcome

- Able to integrate new features into old application

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Thank you