Amazon Connect migration in HCL Technologies' Insurance Business Services

About IBS

HCL Technologies' Insurance Business Services is an FCA-regulated UK&I life and pensions administrator that offers end-to-end services for the insurance industry. For over two decades, HCLIBS has serviced insurers in the life and pensions domain with a wide assortment of BPM experiences and a full range of digital services. HCLIBS has a strong pool of talent and the expertise of more than 600 industry professionals serving their clients.

HCLIBS manages a million policies and has already migrated over four million policies. It has an extensive experience on over 4,600 life and pensions insurance product variants and has performed over 30 systems migrations.

All these services have been offered with a global workforce spread across four delivery centers worldwide.

The need to change

With the onslaught of COVID-19, the insurance service expectations changed and HCLIBS realised that only a future-ready insurance business will survive in the "new normal".

To ensure this, the contact center (CC) had to:

Be operational
even in the
midst of lockdowns

Provide services
on par with or
better than before 2020

Provide services
that were relevant for the
COVID-19 scenario

Further, there was a drive to realise the following but existing contact center (CC) infrastructure was lacking:

The business needs	Problems and pains
Realising the objectives of an omnichannel vision while delivering superior customer service	The traditional on-premises CC infrastructure was unable to add modern customer service channels
Taking customer engagement to new heights	The traditional CC was only able to handle reactive support and had limited capabilities to provide proactive support
Optimising investment in customer service	Expensive, CapEx-heavy investment was delaying all modernisation efforts
Lowering employee stress and enabling productivity with artificial intelligence	A single channel (voice) with little or no AI support meant agents had to stretch too hard when calls spiked to decade-long highs
Enabling deep visibility	There was a lack of visibility on trends of customer issues and sentiments

Table 1: Business Needs Compared with Problems and Pains of the Contact Center

Solution overview

For the unique techno-commercial requirements of a unified platform that served both the front-office agents and the back-office administrators, HCL Technologies came up with an innovative architecture that used the Amazon Connect solution as the base platform and added proprietary code to expand the capability to enterprise back-office use cases.

The entire solution is on Amazon Web Services utilising S3 for storage, Lambda for serverless, DynamoDB for the cloud database, SNS for notifications, and Lex for bot capability. It is integrated with Azure Active Directory for single sign-on.

FluidCC Unified CX Platform
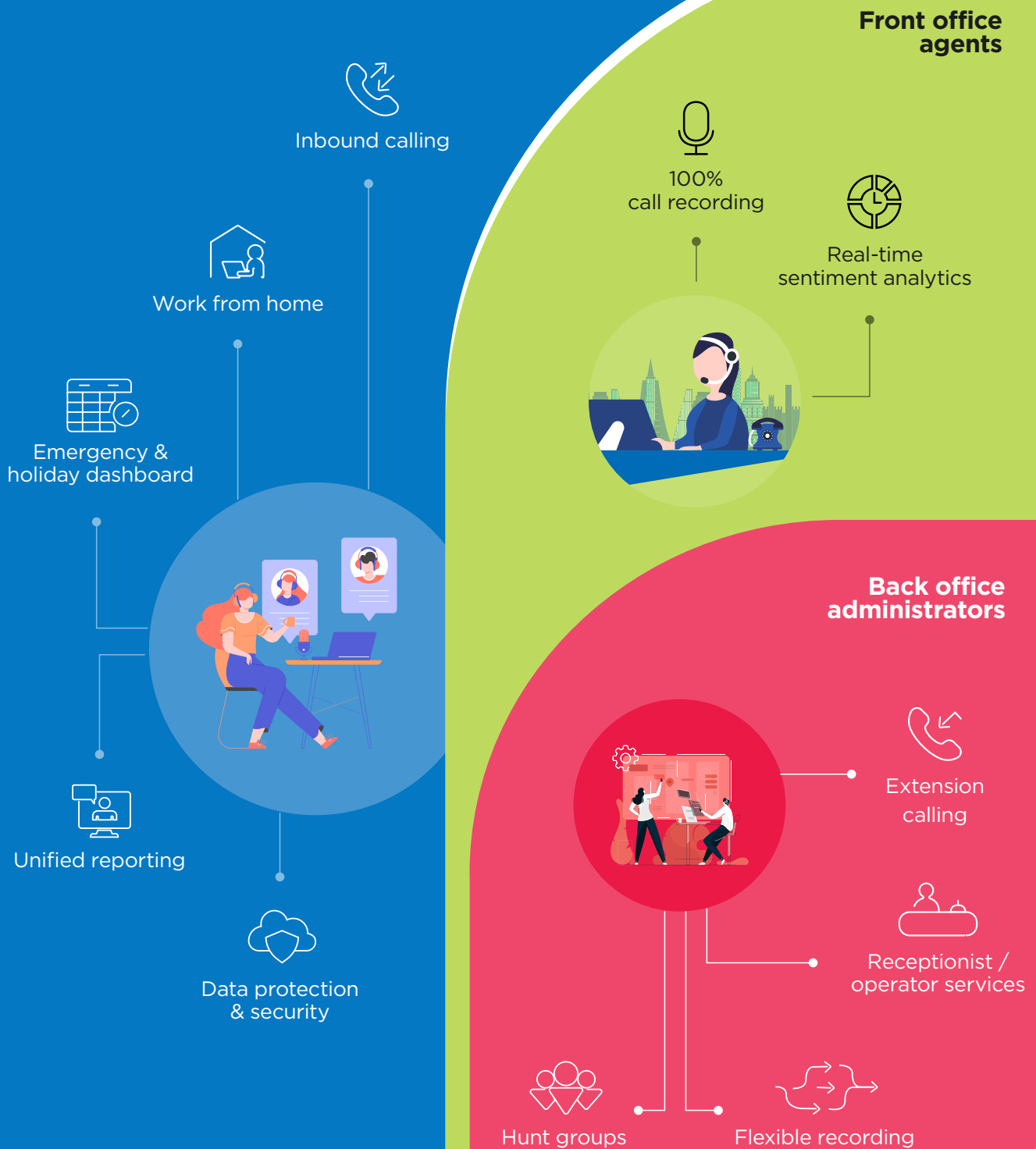## Powered by Amazon Connect

Inbound calling

Work from home

Emergency & holiday dashboard

Unified reporting

Data protection & security

Front office agents

100% call recording

Real-time sentiment analytics

Back office administrators

Extension calling

Receptionist / operator services

Hunt groups

Flexible recording

Figure 1: The FluidCC Unified CX Platform Powered by Amazon Connect

Unified capabilities

Inbound calls

Amazon Connect with DIDs for UK and Ireland. Unlimited capability and fully dynamic. HCLIBS can add and remove DIDs anytime and will be billed only for usage on a postpaid basis.

Work from home using WebRTC

The entire Amazon Connect CCP (agent interface) is HTML5 web-based and is WebRTC-enabled. This means that agents can receive and make calls from anywhere, be it from office, DR locations, or even from home. This is very important to ensure resilience during lockdowns.

Emergency and holiday controls

If external callers call outside of office hours (including public holidays or emergencies), then they are informed about the emergency or holiday and when they can call back. HCL Technologies built a GUI for emergency and holiday controls to enable supervisors to quickly change holiday and emergency flows based on the event(s).

Figure 2: GUI for Call Center Emergencies/Holidays

Unified reporting

Default Amazon Connect reports are available to supervisors. Additional custom reports using Amazon QuickSight are available from HCL Technologies' Dashboard. Also, automated scheduled reports are available and developed by FluidCC.

Front office

For front office, the following were the solution components delivered:

Call recording

100% call recording is enabled on all calls and is stored securely in S3 buckets with full encryption. The retrieval also happens from the Amazon Connect Interface on a traditional date/time/agent basis. It is now also possible to use keywords to search for calls.

Intent and sentiment analytics

HCL Technologies has also deployed contact lens which monitors calls in real time for customer intent and sentiment. This now enables supervisors to filter out calls by keywords quickly and provide assurance of a significantly better quality.

Back office

The following are the new capabilities HCL Technologies' FluidCC added to Amazon Connect to enable backoffice staff (administrators) to provide customer service on par with their front-office peers

Extension-based calling

HCL Technologies has configured the Amazon Connect solution to enable extension number capability for all employees. This allows them to call each other directly. All HCLIBS users will be assigned an extension number in accordance with the names and numbers provided in the embedded document IBS phone lines. HCLIBS users (including call center personnel) have the ability to transfer a PSTN call to another HCLIBS user, and once the transfer is made, have the option to remain on the call or exit the call.

Receptionist/Operator services

External callers to HCLIBS can have the call routed directly to a specific HCLIBS employee should they know their extension number or have the call answered by an operator who can deal with their query. Customers call the reception number to be serviced by the receptionist IVR/bot that allows the call to be transferred to the extension or hunting groups directly if they are aware of the details. If they are not aware, then the call is routed to the human receptionist who can then transfer to the correct employee extension or hunting group. Back-office administrators now have the ability to make and take PSTN calls on Amazon Connect to the following numbers:

1. **UK domestic landline numbers**
2. **UK mobile numbers**
3. **International landline numbers**
4. **International mobile numbers**

If the external caller to HCLIBS calls a known extension number and that number is engaged and/or not answered, they get transferred to the receptionist.

Hunting group

Calls can be transferred to a hunting group which rings the call on a round-robin basis till an employee picks up. Hunting groups are extension numbers grouped into a 'hunt group' where an inbound call is routed to the first available extension number in the 'hunt group'. Should that extension number become not available or not answered within a preset number of seconds, the call is automatically routed to the next available extension number in the 'hunt group'.

Flexible recording

100% of calls are recorded by default. Administrators can use an unrecorded line for the segment of calls that use financial transactions.

Data protection and security approach

Data protection and security has the highest priority in our architecture and HCL Technologies has designed the solution such that all the sensitive data is protected from any unauthorised access.

With Amazon Connect being a cPaaS, AWS is responsible for protecting the infrastructure that runs Amazon Connect services on the cloud. Third-party auditors regularly test and verify the effectiveness of the AWS cloud services as part of the AWS compliance program. HCL Technologies follows the best practices to be compliant with the Health Insurance Portability and Accountability Act (HIPPA) in Amazon Connect as mentioned below:

1) Use AWS key management service (KMS) to encrypt Amazon S3 contents at the object level which covers recordings, logs, and saved reports by default for Amazon S3. Encryption in transit and rest rules will apply.

2) Use encryption in the store customer input block for sensitive dual-tone multifrequency (DTMF) information.

For data protection, individual user accounts with AWS IAM. Each user will be given only the permissions necessary to fulfill their job duties. HCLIBS also has additional controls to secure data in the following ways:

- Using multi-factor authentication with each account

- Configuring a secure sockets layer (SSL) and transport layer security (TLS) to communicate with AWS resources

- Setting up API and user activity logging with AWS Cloud Trail

Data held within Amazon Connect is segregated by the AWS account ID and the Amazon Connect instance ID. This will ensure that data can be accessed only by the authorised users of a specific Amazon Connect instance.

All the public switched telephone network (PSTN) calls are connected between Amazon Connect and various telecommunications carriers using either private circuits maintained between Amazon Connect and service providers or existing AWS internet connectivity. For PSTN calls routed over the public internet, signaling is encrypted with TLS and the audio media is encrypted with secure real-time transport protocol (SRTP). Softphone calls are established to the agent's browser with an encrypted WebSocket connection using TLS. The audio media traffic to the browser is encrypted in transit using datagram transport layer security (DTLS)-SRTP.

All storage pertaining to call recordings are delivered to the Amazon S3 bucket. All recordings that are stored in the Amazon S3 bucket are secured using an AWS KMS key that will be configured when the instance gets created. HCLIBS assigns appropriate security profiles to limit the access to these recordings. Access to these specific recordings are captured in the CloudTrail service enabled on Amazon Connect. HCLIBS also uses the Amazon Macie service which assists in discovering and securing personal data that is stored in Amazon S3.

Amazon Macie is a fully managed data security and data privacy service that uses machine learning and pattern matching to discover and protect sensitive data in AWS. Macie automatically provides an inventory of Amazon S3 buckets including a list of unencrypted buckets, publicly accessible buckets, and buckets shared with AWS accounts defined outside of AWS organisations. Macie applies machine learning and pattern matching techniques to the buckets selected to identify and alert us to sensitive data, such as personally identifiable information (PII). All the events can be searched and filtered and can be shared with appropriate resources. This will also help in meeting regulations such as HIPAA and the General Data Protection Regulation (GDPR).

All data exchanged with Amazon Connect is protected in transit between the user's web browser and Amazon Connect using industry-standard TLS encryption. HCL Technologies will deploy additional functionalities like AWS Lambda, Amazon Kinesis for AI, and customisation. Contact data classified as PII or data that represents customer content being stored in Amazon Connect is encrypted at rest (before it is put, stored, or saved to a disk) using a key that is time-limited and specific to the Amazon Connect instance.

The HCL Technologies transformation approach

HCL Technologies' approach was to take a risk-free roadmap that would blend modern technology but not disturb the processes that are in progress with positive results.
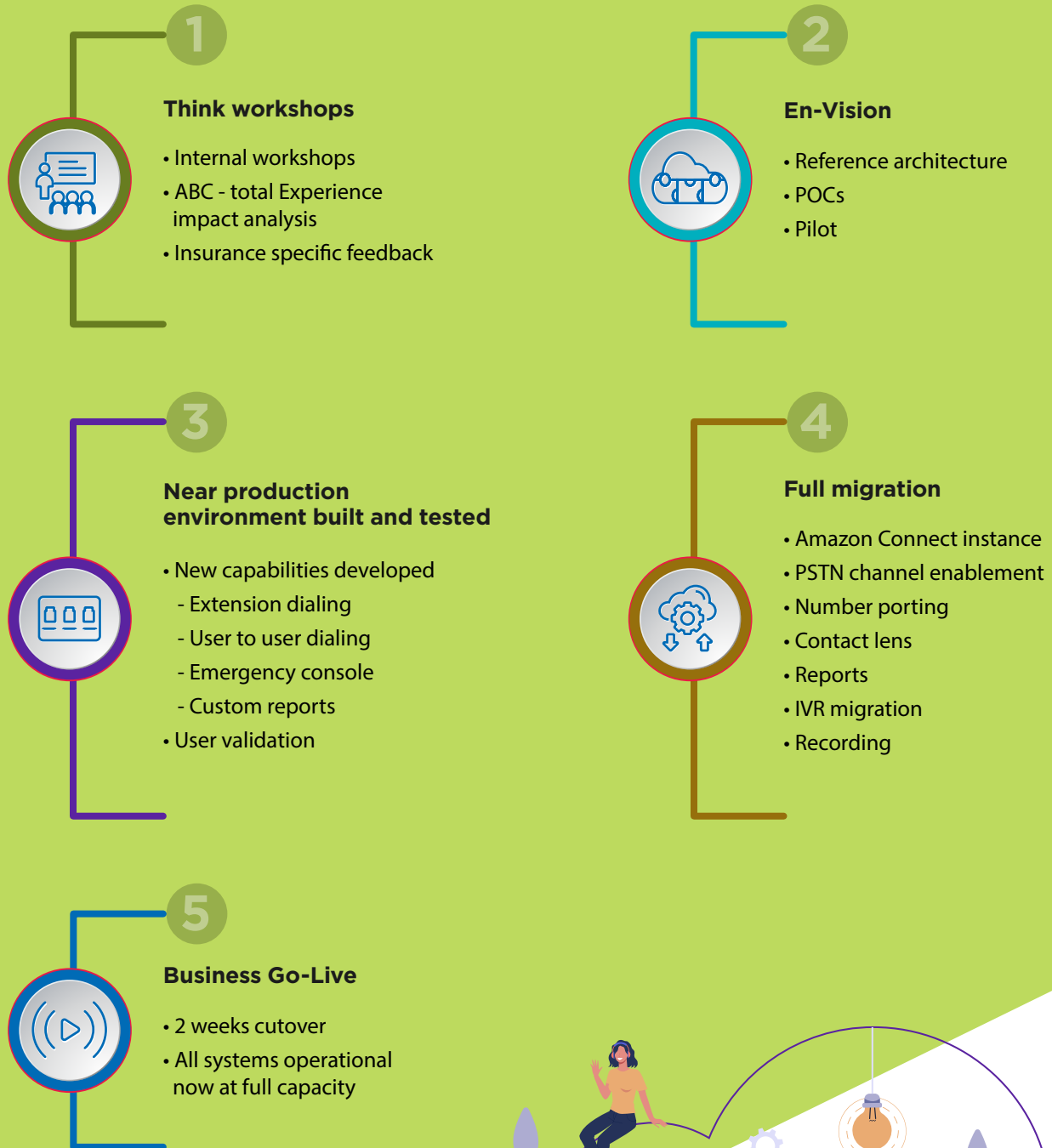
The approach was as follows:

1 Think workshops

- Internal workshops
- ABC - total Experience impact analysis
- Insurance specific feedback

2 En-Vision

- Reference architecture
- POCs
- Pilot

3 Near production environment built and tested

- New capabilities developed
  - Extension dialing
  - User to user dialing
  - Emergency console
  - Custom reports
- User validation

4 Full migration

- Amazon Connect instance
- PSTN channel enablement
- Number porting
- Contact lens
- Reports
- IVR migration
- Recording

5 Business Go-Live

- 2 weeks cutover
- All systems operational now at full capacity

Figure 3: The HCL Technologies' transformation approach

Think workshops

- Conducted internal workshops to illustrate and demonstrate new capabilities
- Reviewed impact on agent, customer, and business experiences
- Insurance-specific feedback incorporated into the solution architecture

En-Vision

- Reference architecture drafted and iterated
- POCs conducted to see the validated assumptions and clarity obtained vis-à-vis insurance intricacies
- Pilot
- Near-production environment built and tested

New capabilities developed

- Extension dialing
- User-to-user dialing
- Emergency console
- Custom reports
- User validation

Full migration

- Set up of cloud tenant
- Channel enablement (inbound and outbound)
- PSTN integration (number porting)
- Speech analytics
- Historical and real-time reporting
- Configuration migration and management (IVR management)
- Recording

Business Go-live

- Step-by-step cut-over of phone lines from legacy to Amazon Connect telephony
- Cut-over for all business customers achieved within a week with no surprises
- All systems operational now at full capacity

Benefits

Significant lower telephony infrastructure platform costs

Amazon's Pay-Per-Use model means that the architecture is fine-tuned to use only the resources needed. Hence, HCLIBS pays only for the resources configured and used for the service.

Employee productivity from both office and home

Employees can now be productive even during business disruption events like pandemic-induced lockdowns. Employees, both agents and administrators, get exactly the same capability at home as in office.

Scale easily without CapEx

Being cloud-based, HCLIBS now has the ability to start new delivery centers without significant CC investment. The Pay-Per-Use commercial model lends HCLIBS to expand and contract as per market conditions.

Ability to provide modern capabilities as per customer needs

Modern capabilities like intent/sentiment analytics, bots, proactive engagement, etc., can be added and removed at a per-customer and per-user level.

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HCL

HCL Technologies (HCL) empowers global enterprises with technology for the next decade today. HCL's Mode 1-2-3 strategy, through its deep-domain industry expertise, customer-centricity and entrepreneurial culture of ideapreneurship™ enables businesses to transform into next-gen enterprises.

HCL offers its services and products through three lines of business - IT and Business Services (ITBS), Engineering and R&D Services (ERS), and Products & Platforms (P&P). ITBS enables global enterprises to transform their businesses through offerings in areas of Applications, Infrastructure, Digital Process Operations, and next generation digital transformation solutions. ERS offers engineering services and solutions in all aspects of product development and platform engineering while under P&P. HCL provides modernized software products to global clients for their technology and industry specific requirements. Through its cutting-edge co-innovation labs, global delivery capabilities, and broad global network, HCL delivers holistic services in various industry verticals, categorized under Financial Services, Manufacturing, Technology & Services, Telecom & Media, Retail & CPG, Life Sciences, and Healthcare and Public Services.

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