

Communication, just the way  
your customer likes it...

... create the ultimate customer experience and put your  
customer first.

Customer Communications  
Management as a Service



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# 1. INTRODUCTION

The goal of this paper is to outline what Customer Communication Management as a Service (CCMaas) means, and what the implications will be for Enterprises and Service Providers that evolve their IT infrastructures and software implementation preferences.

For readers who are not familiar with the CCM industry, we have provided a brief introduction and reference to more materials below.

At Eclipse, we define Customer Communications Management as a Service (CCMaas) as the cloud-based creation, management, and fulfilment of personalized, omni-channel communications at scale. In this context, omni-channel refers to communications that are channel and/or device-agnostic, meaning that they can be sent across physical and digital channels with minimal friction and ideally reach a consumer with a relevant message at any point along the customer journey.

## 1.1. CUSTOMER COMMUNICATION MANAGEMENT - CHALLENGE

### SEEING CRITICAL CUSTOMERS AS AN OPPORTUNITY

#### *Leading the way with Customer Communication Management as a Service*

As an organisation, you're in contact with your customers daily. After all, you want to build up a solid relationship with your customers and keep them fully informed. And naturally, you want to attract new customers too. Organisations operate in an increasingly complex environment. How can they meet the high expectations of consumers while also decreasing costs and maximising profitability? How do you get started? There are many processes running across various departments. Who takes control? Who is responsible? Creating a system that is both viable and valuable is no easy task.

### HIGH CONSUMER EXPECTATIONS

Consumers want personalised, relevant and comprehensible interactions, with organisations they are interested in, or whose services they are using. Having taken the initiative to make contact, they want an immediate response through their preferred channel. Interaction increasingly takes place in the form of conversation through various channels. For example, a consumer may get in touch by chat, telephone or by filling in an online form. The organisation generally responds through the same or other channels, such as SMS, e-mail or by letter. Consumers also expect that messages will be easy to read on their mobile device, and that they will not need to repeat themselves because the organisation already knows them well.

### THE CHALLENGE FOR ORGANISATIONS

The secret to an organisation's success lies in gaining consumer confidence and loyalty. In recent years, organisations have invested heavily in seeking efficient, effective ways of maintaining contact with their customers. Still, many find it difficult to establish coherent communication. This is a shame, because it offers great opportunities to satisfy consumers' higher demands and thus make your organisation stand out from competitors.

Consumers vary, and interactions come about in equally diverse ways. Many organisations set up their systems accordingly, while taking care to comply with the stricter legislation and regulations. With various departments and organisational silos, this often leads to a fragmented, complex and costly environment that considerably hinders the establishment of coherent, cost-effective communication. This is at odds with the objective of providing a successful omnichannel communication strategy, and unfortunately does not meet the consumer's high expectations.

### WHAT WE DO

Eclipse provides the convenience of a single CCMAaaS environment which we render data into readable items that are subsequently distributed to different output channels via automated scenarios. Using this as a starting point, we store information and report it smartly and transparently. With this integration, content creation, smart distribution and confirmations plays an important role. In addition to functionality requirements, the solution facilitates audits, protection of personal data and A/B tests. A complete solution for client communication in the cloud, where you only pay for what you use.

Eclipse offers its software as a service in the cloud in Microsoft Azure. We do this in the most efficient and effective way in our multi-tenant platform (single tenant also possible) multi-tenancy is the technology to share one platform among different users. Controlling and managing just one platform enables us to offer a multi-tenant SaaS solution in the most efficient and effective way. There are a number of advantages of multi-tenancy. These benefits are especially visible when we look at the costs, performance and reliability of our services.

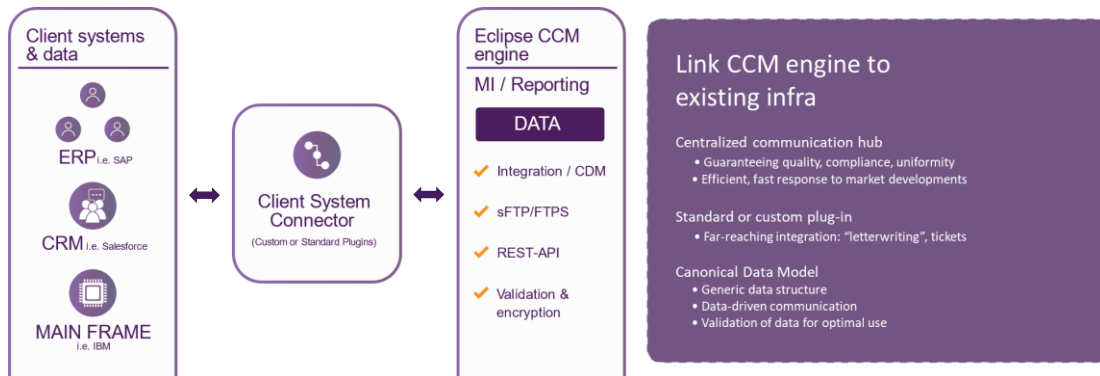
- **Infra:** The same environment is used so that you can work more efficiently with fewer systems. This saves hardware and energy consumption.
- **Scalability:** When the capacity needs to be increased, new instances will be added automatically after which the workload is divided over the various instances, when the demand is reduced the extra capacity is automatically scaled down. **Upgrades:** regardless of the number of users of our platform, we only must perform upgrades once because they all use the same multi-tenant environment.
- **Security, governance & Identity:** centrally arranged and can be arranged separately per tenant, making it efficient and yet configurable.



## 1.2. KEY COMPONENTS OF CCM

To better understand the CCM industry, it is helpful to look at the key components that are included in the Eclipse CCMaaS solution and see what we offer on each one.

### 1.2.1. Integration



CCM software can be seen as a front-office experience technology that allows enterprises to provide communications to its customers at scale. That front-office technology needs to be connected to the core systems in the back-office. So, integration is a very important component of our service and we have extensive experience to get and hand back confirmation to core systems.

Eclipse only supports (third-party) system integrations that support the highest security standards in cryptography and identity management. Our standard configuration supports data delivery via secure FTP and REST-API protocols. Custom integrations, such as VPN or SOAP, are possible on request.

### 1.2.2. Content & Template Management

Another important part of CCMaaS is the use of a content & template management system to store content assets, such as text fragments, headers/footers, images and protect your corporate identity even across different company labels. Content management offers capabilities that enable content sharing across touchpoints and channels, thereby creating greater efficiency, consistency, and control. Business authoring capabilities provide dedicated user interfaces to create, manage, and approve content.



At Eclipse we are embracing intuitive browser-based content management tools and ensure ease of use for non-technical business users. Eclipse is using API-based calls to access the centralized content and content-related services. This enables our service to pull in content from API endpoints or push them to other systems.

### 1.2.3. Production Engine

When processing large amounts of data, it is important that you can rely on robust technology. CCMaaS has extensive experience with transforming large amounts of data into specific documents formats at very high speeds. This is the responsibility of the production engine. The production engine can transform data into many output formats like DOCX, PDF, HTML5, CSV, TXT, AFP, Creo VPS, IJPDS, IPDS, MIBF, NexPress VDX, PCL, PPML, PostScript, VIPP.

**Production engine**

- ✓ Batch & on demand
- ✓ Document composition
- ✓ Job scheduling

### 1.2.4. Scenario Management

Communication processes can be predefined so that the customer journey will run smoothly. By automating these processes, your communications operate as efficiently as possible. Scenario management allows our customers to use a workflow to combine all available output channels in a single, complete communication scenario and link various triggers to modular output channels.

**Scenario management**

- ✓ Channel Preference
- ✓ Customer journey
- ✓ A/B testing

With scenario management, users can easily manage available communication channels through a transparent drag-and-drop editor. This allows users to easily configure 'What if', 'If-Then', actions and triggers. If desired, Eclipse can also support this process by fully outsourcing your scenario management.

### 1.2.5. Distribute

As mentioned, interaction increasingly takes place in the form of conversation through various channels. Eclipse specializes in facilitating and linking customer channels. WhatsApp for Business, SMS, E-mail and Print of personal messages, user environments and voice messages are familiar territory to us. We ensure that information from one channel, for example an e-mail, is automatically updated in another channel, for example the user environment or archive. And do you want to be sure that a message has been received or read? Via Closed-Loop, we give insights into the actions that a customer has or has not carried out.

**Distribution**

- ✓ Omni-channel
- ✓ Customer integration
- ✓ Personalized messaging

### 1.2.6. Reporting

Centralized control of communications across various departments and organisational silos and systems are an essential step towards creating a better omni-channel customer experience. Our detailed dashboards give business users insights into which communication processes are running across the organization and what the results are. We also report on the costs and if KPIs are being met.

**Management dashboard**

- ✓ Widget based
- ✓ Real-time information
- ✓ Scenario timeline

Within our Microsoft Azure environment, all processes and activities are registered and logged for a minimum period of 6 months. If so desired, this period can be extended. All processing and responses are incorporated into a widget-based dashboard available in the portal. We provide a bird's eye view of what is communicated to a single customer at every point along their journey, and give the ability to track, analyse, start, or stop communications at any given time. A drill down to important detail can be made.

## 2. CUSTOMER COMMUNICATION MANAGEMENT

Now that we have briefly explained the CCaaS components, we can dive more into our services and details.

### 2.1. THE TECHNOLOGY

The Eclipse CCaaS is based on Azure Kubernetes Service (AKS). We make our software highly scalable in so-called docker containers. The combination of Docker containers and Kubernetes strengthen each other. Docker provides an open standard for packaging and distributing applications in containers, while Kubernetes provides the layout and management of distributed applications in containers created with Docker. In other words; Kubernetes provides the infrastructure needed to deploy and run applications built with Docker. This technical setup facilitates deployments and will improve application uptime. It also ensures that at peak load, the workload is distributed over multiple instances. We automate deployment provisioning in Azure DevOps through continuous integration and continuous delivery (CI/CD). This makes it easier for us to maintain our code base in a single repository and helps us to deploy updates controlled, faster and more secure through predefined pipelines.

We believe that CCaaS is a popular solution for Enterprises and Service Providers:

1. Allowing them to offer white-labelled software that is fully managed. We keep the software up to date, ensures its availability including 24x7 support and charge based on consumption with our pay-per-use pricing model. It also allows the business to procure CCM independently from IT, so it will put a much lower strain on scarce IT resources.
2. It is easy to scale and scales up and down depending on actual throughput. Many organisations deal with peak volumes throughout the year and base their capacity and performance requirements on those moments of peak volumes.
3. CCaaS gives a great degree of control and deep insights because our solution not only sends messages, but it also provides detailed information on received feedback data.
4. CCaaS is a highly secure and cloud native platform that offer built-in encryption, audit logging and automatic backup & disaster recovery capabilities.
5. CCaaS can speedup digitization because it's easy to integrate with legacy systems that are not 'fit for future' that way it will 'fit for pupose'.
6. Working with CCaaS will unify your development team and operations team on one platform to build, deliver and scale applications quickly and confidently.

## **2.2. SECURITY**

Security or Privacy By Design is an extremely important topic in our CCM as a Service solution and and meet enterprise-grade security and governance. Eclipse refers to a set of policies, controls, procedures, and technologies to guarantee:

1. Secure infrastructure
2. Protected personal data and stored/archived communications
3. Secure communications to the recipient
4. Regulatory compliance

### **2.2.1. Infrastructure, application and personal data storage**

Securing our infrastructure and applications touches on several aspects:

#### **2.2.1.1. Authorization - Ensuring that only authorized users have access**

Access at the enterprise level (for business users) is governed by Azure Active Directory and Single Sign On (SSO) services based on the current industry standards.

Access at the portal level by end-users is governed by username and password, but it is also possible with multifactor authentication, such as confirming through mobile app, phone or a pin code received by text message.

#### **2.2.1.2. Data encryption - The ability to encrypt so that data cannot be accessed by unauthorized parties**

At Eclipse we have built-in encryption for storing data called data at-rest. Next to this we also encrypt all supplied privacy sensitive data on application level. For data in-transit we use encryption through SSL certificates for accessing web applications, API calls and file-based data transfers. All web applications are running behind an application gateway secured with firewall rules that comply with OWASP 3 and SSL policies with minimum protocol version TLS 1.2.

#### **2.2.1.3. Data and tenancy isolation measures in multi-tenant environments**

Because we are running mission-critical communications on our multi-tenant CCMaaS we have container security measurements. In this way, data from different organisations remain in separate databases or storage locations.

#### **2.2.1.4. Geographic location of data stored in the cloud**

As an EU company our EU customers have traditionally had concerns about storing data in other economic zones with Cloud Services Providers' (CSPs) infrastructure because of the risk that personal data would be accessible to local governments.

CSPs have evolved their offering into geographical economic zones. It is now possible to specify in which geographical area data should be stored and processed. Eclipse CCMaaS makes use of the Microsoft Azure West-Europe (Amsterdam) zone.

All delivered data will be processed and generated messages are distributed from this central location.



### OUR VIEW ON DATA

#### ***How your organization uses data or information significantly impacts client communication.***

Client communication data often originates from several source systems each with their own data model. This is why Eclipse has developed a Canonical Data Model (CDM). This model consists of generic JSON and/or XML fields. Our CDM comprises definitions for communication between various data schemes. In the CDM, we use a segmented structure with predefined data areas such as personal data, address data, reference data, production data, distribution data and content data. This allows us to validate the source data against a scheme and control the behaviour through-out the production engine.

In our platform, we process JSON or XML based on the CDM guidelines. This works as follows: Your organization delivers the data already in the CDM format or in the data format from the source system. We subsequently convert and if needed enrich the data from your source system into the standard CDM format and validate the delivered CDM data for further data processing.

Should data translation be necessary, we will ensure we process complete and up-to-date data. This is essential to making the most of all the desired functionalities our platform offers you.

### 2.2.2. Managing risks

The International Organization for Standardization is a collection of experts who have developed over 23,000 standards that are administered by a number of external certification organizations. Eclipse is ISO 27001 certified. The ISO 27001 framework that helps Eclipse through the assessment and remediation of potential threats and risks.

### 2.2.3. GDPR

After going into effect in May 2018, the General Data Protection Regulation (GDPR) became the international benchmark for data protection legislation. The regulation was designed to give European Union citizens greater control of their data by outlining the legal actions of any business that use their information.

Because we process personal data that can be traced back to an individual, privacy plays an important and sensitive role. This is why Eclipse highly values the importance to GDPR-proof personal data processing. If customers use our cloud-based service, data is stored encrypted in a single, central location and will provide them with the option to determine the data retention period for each communication scenario.

### DEPERSONALIZATION OF PERSONAL DATA TO AN ID

After personal data processing, it is essential that the Administration, Auditing and Reporting departments can obtain the desired insights. Eclipse depersonalizes the delivery of data, and only stores a uniquely provided customer reference as a reference back.

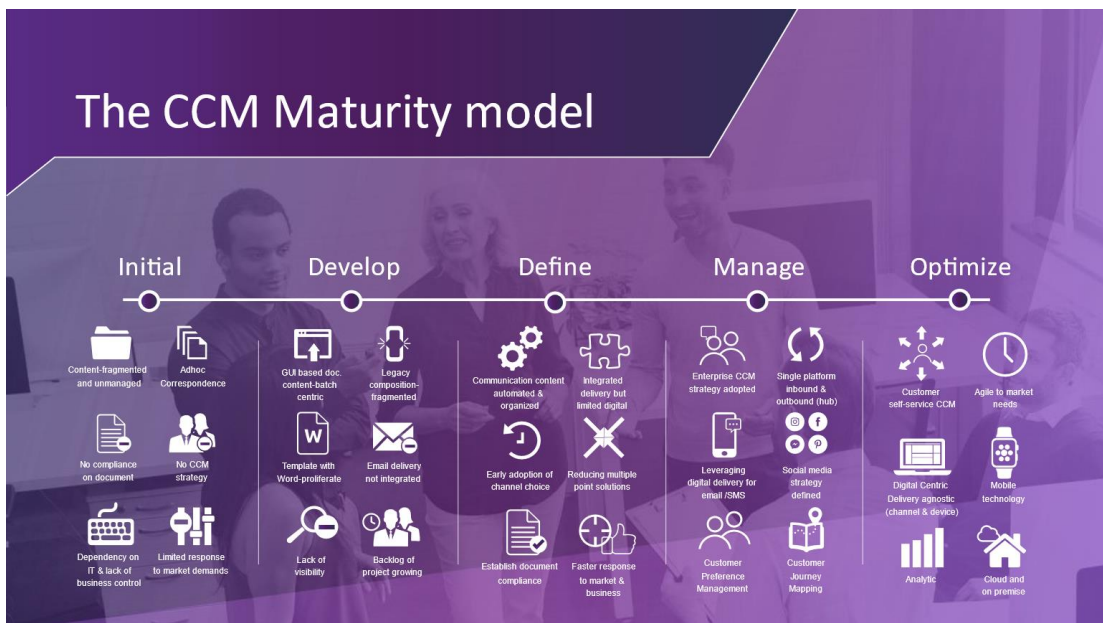
## 2.3. ECLIPSE SERVICE MODEL

As the market continues its progression from IT led communications strategies toward a faster and more interactive ecosystem, Eclipse believes an increasing number of B2C communications schemes will be provisioned through cloud-based architectures.

### 2.3.1. Motivations for subscription and consumption-based pricing

There are several motivations behind purchase preferences for cloud migration, which makes it interesting for Eclipse to opt for a consumption-based pricing model. The motivation varies by evolutionary digital maturity.

For instance, when IT led organizations begin moving CCM to the cloud, they are working to reduce operational cost, increase security, comply with regulations, and manage risks. They often prefer buying perpetual software licensing because it keeps expenses predictable.



Enterprises with a more advanced digital maturity typically have the Line-of-business (LOB), shared service, or CX teams act as the key buyers in CCM. Their business cases are built differently. Often, they need to reduce “business-as-usual” spend in order to free-up cash for digital transformation initiatives.

An OPEX model usually works better in these scenarios since they won't need to tap into IT budgets, (although IT remains involved). Consumption-based pricing may be a good fit for buyers at this level because they often prefer a cloud / subscription model that allows them to circumvent not only high capital outlays, but also long cycle times and bureaucratic red tape. The cloud's instant scalability and faster integration, combined with a scalable pricing model and the low cost of performing a proof-of-concept, allows these buyers to experiment at low cost and find the solutions that best fit their needs.

### 2.3.2. Pricing-Model

The Eclipse CCaaS pricing model is structured around several components. For optimal use of CCaaS, integration with core systems is necessary. This tailor-made integration includes an additional one-time charge for setup. Apart from the additional one-time charge, our pricing-model consists of the following components:

1. **Base price:** This fixed monthly cost covers hosting, maintenance, and other core functions, of our CCaaS.
2. **Communications volume:** Depending on type of output we handle price differences, because for example the distribution of a Print, Email, WhatsApp message or SMS differ.
3. **Data volume:** This charge is based on the number of messages the platform generates.
4. **Number of users:** Based on the number of concurrent users we charge a price per user.

We make a distinction between technical support roles for Service Providers and interactive business users for Enterprises.

Pricing is based on tiers which ranges from small to large volume bands and depending on the country, output type, and size of the organization.

