Rich Communication Centre Requirements

Approved Version 1.0 – 25 Oct 2016

Open Mobile Alliance

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[CSTA-III] "Services for Computer Supported Telecommunications Applications (CSTA) Phase III", ECMA-269, 8th Edition / June 2009, URL:http://www.ecma-international.org/activities/Communications/TG11/cstaIII.htm

[ITU-T Y.2216] "NGN capability requirements to support multimedia communication centre (MCC) service", ITU-T Y.2216, Mar 2010, URL:http://www.itu.int/rec/T-REC-Y.2216/en

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version 2.9, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_9, URL:http://www.openmobilealliance.org/

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

Agent	A RCC user associated with one or more RCC devices and authenticated and authorized to provide RCC services including performing communication control operations, such as holding or transferring communications, etc.
Context Information	Any volatile or persistent information, which describes a state of a RCC Agents or RCC Customers. Context Information can be manually set by humans, inferred from other information, or requested from databases. Note: the context model may include information such as: location, presence, profile, subscriptions.
Enterprise Customer	An Enterprise Customer refers to a RCC customer who contracts with RCC provider and acquires services including aggregation of certain messages from Web 2.0 sites.
Master Agent	A Master Agent refers to the RCC Agent who creates and manages a group of Agents to provide RCC services.
Multitenancy	Multitenancy refers to a principle in software architecture where a single instance of the software (multi-Tenant application) runs on a server, and lets customers (Tenants) share the same hardware resources, by offering them one shared application and database instance, while allowing them to configure the application to fit their needs as if it runs on a dedicated environment.
Sub-agent	A Sub-agent refers to the RCC Agent who is created and managed by Master Agent.
Tenant	A Tenant is the organizational entity which rents a multi-Tenant SaaS solution. Typically, a Tenant groups a number of users, which are the stakeholders in the organization.
Virtualization	Virtualization (or Multi-Instance) refers to a principle in software architecture where each customer gets his own instance of the application (and possibly also of the database).
Web 2.0	The term Web 2.0 is associated with web applications that facilitate participatory information sharing, interoperability, user-centered design, and collaboration on the World Wide Web.

3.3 Abbreviations

CSTA	Computer Supported Telecommunications Applications
CTI	Computer Telephony Integration
IVR	Interactive Voice Response
MCC	Multimedia Communication Centre
MRS	Multimedia Resource Service
NGN	Next Generation Network
OMA	Open Mobile Alliance
SaaS	Software as a Service

4. Introduction (Informative)

Communication centre has been a prosperous industry for many years, for services such as contact centre, customer-care centre; however, due to its self-contained system and outdated business model, the traditional communication centres are becoming limited with respect to the Web 2.0 and mobile internet booming, evolution towards ALL-IP network and the trend towards telco capabilities exposure. Moreover, the current communication centres are also low-efficient and the cost of deployment and maintenance is also high.

The Rich Communication Centre (RCC) Enabler aims to address those limitations exploiting the benefits of telecommunication approach and internet approach.

The RCC Enabler allows using widely deployed communication infrastructure in order to provide rich service capabilities, especially Web 2.0-oriented service capabilities and mobile agent-based service capabilities. Moreover, the RCC Enabler is also intended to enable rich communication centre service capability in a cost-effective and on-demands manner.

The RCC Enabler assumes that the mobile network or other access networks are capable of establishing a data bearer connection between the mobile agent and the server part of the RCC Enabler.

The RCC Enabler utilizes existing standards where available and appropriate aiming at the same time to be extensible through a progressive incorporation of additional features when the need arises.

This RCC RD describes the high-level functional requirements for the RCC Enabler, requirements for virtualization and multitenancy features, and also includes RCC-specific security, interoperability, charging and privacy requirements.

The RCC Enabler includes a set of core interfaces which can be used to facilitate and implement various types of services based on rich communication centre.

4.1 Version 1.0

The version 1.0 of the RCC Enabler defines an overall framework that enables rich communication centre service. Additionally, relevant APIs are also in the scope of this version.

5. RCC release description (Informative)

In the context of the RCC Enabler, the following roles may be identified:

- Customer: A customer can use RCC-based services to request specific expertise from a provider and consume this service through several ways including text message, video, audio, web (webpage, widget), etc, based on various access types.
- RCC provider: A RCC provider can provide RCC-based services to customers making use of expert Agent (both may use mobile access). And RCC provider can also provide services to Enterprise Customers based on interaction with other domains, e.g., Web.2.0. Besides, the RCC provider can also inter-work with other OMA enablers (e.g. messaging, presence, location) for providing context-aware RCC-based services.
- Agent: An Agent can be any individual who has specific expertise and can provide consultancy to customers; an Agent needs to install a software client on his device (e.g. a mobile phone) which supports functions such as Agent management, security, authentication, profit management, policy management, real time communication management, etc. Moreover, an Agent can also share profits with RCC provider.
- Other domains: Other domains include Web2.0 applications, e.g., Social Network Services, Blogger, Micro-Blogger, or others.

5.1 End-to-end Service Description

The RCC Enabler enables information services where a customer needs support and information from an expert, and the service provided exploits Web 2.0 technologies available today. The expert (i.e. the Agent) may be an individual that registers to the service. The RCC Enabler allows also experts and revenue sharing management.

6. Requirements (Normative)

The requirements in this section define the full RCC Enabler.

6.1 High-Level Functional Requirements

6.1.1 Agent (de)registration to RCC-based services

Label	Description	Release
RCC-HLF-001	RCC Enabler SHALL support the capability for the Agent to register to or de-registration from the RCC server.	1.0
RCC-HLF-002	RCC Enabler SHALL support the capability for the Agent to modify his/her registration information on the RCC server.	1.0

Table 1: High-Level Functional Requirements - Agent (de)registration to RCC-based services

6.1.2 Customers assignment to Agents

Label	Description	Release
RCC-HLF-003	RCC Enabler SHALL support the capability for the RCC server to provide information about the candidate Agents to the customers (e.g., introduction, score, comment record). Based on this information the customer can select an Agent.	1.0
RCC-HLF-004	RCC Enabler SHALL support the capability for the RCC server to provide information about the customer (e.g., score, comment record) to assist the Agents to provide better service to the customer.	1.0
RCC-HLF-005	RCC Enabler SHALL support the capability for the RCC server to select Agents based on information available.(e.g., based on Agent's presence, location)	1.0
RCC-HLF-006	RCC Enabler SHALL support the capability for the Agent to halt/resume service temporarily. **Informational Note**: For example, when the Agent can not provide service, he/she can request the RCC server to suspend the service temporarily and to not be considered for customers' assignment.	1.0
RCC-HLF-007	RCC Enabler SHALL support an Agent (both master Agent, Sub-agent) setting a specified customer as his/her own customer.	1.0
RCC-HLF-008	RCC Enabler SHALL support getting the number of sessions of a specified Agent. Informational Note: the number of sessions has to be meant here as the active sessions, in order for example to distribute new incoming requests in a balanced way, avoiding overload of an Agent.	1.0
RCC-HLF-009	RCC Enabler SHALL allow the RCC Agent to select a RCC customer manually or the RCC Agent to be associated to a RCC customer automatically (based on Agent's and customer's preferences and the service policies).	1.0
RCC-HLF-010	RCC Enabler SHALL allow the RCC customer to select a RCC Agent manually among a choice of RCC Agents identified on the basis of customer's preferences and the service policies.	1.0
RCC-HLF-011	RCC Enabler SHALL support multiple RCC Agents serving simultaneously the same RCC customer.	1.0
RCC-HLF-012	RCC Enabler SHALL support task transferring within a RCC Agent group.	1.0
RCC-HLF-013	RCC Enabler SHALL support distribution of RCC customer's requests to the appropriate RCC Agents based on RCC Customer's Context Information.	1.0
RCC-HLF-014	RCC Enabler SHALL support distribution of RCC Customer's requests to the appropriate RCC Agents based on RCC Agent's Context Information.	1.0

Table 2: High-Level Functional Requirements - Customers assignment to Agents

6.1.3 Feedback from Customers about Agents and vice versa

Label	Description	Release
RCC-HLF-015	RCC Enabler SHALL support customer review mechanism (e.g. review and comments, scoring) to Agents after the service has been provided.	1.0
RCC-HLF-016	RCC Enabler SHALL support the capability for the Agent to score and provide comments to the customers after the service has been provided.	1.0

Table 3: High-Level Functional Requirements - Feedback from Customers about Agents and vice versa

6.1.4 Master Agent and Sub-Agents management

Label	Description	Release
RCC-HLF-017	RCC Enabler SHALL support Sub-agents creation/deletion by Master Agent.	1.0
RCC-HLF-018	RCC Enabler SHALL support Sub-agents account information modification by Master Agent.	1.0
RCC-HLF-019	RCC Enabler SHALL support Sub-agents suspension by Master Agent.	1.0
RCC-HLF-020	RCC Enabler SHALL support the Master Agent to manage his/her tasks as well as his/her Sub-agents tasks.	1.0
RCC-HLF-021	RCC Enabler SHALL support Sub-agents right management by Master Agent (e.g. operation rights for the Sub-agent).	1.0
RCC-HLF-022	RCC Enabler SHALL support assigning tasks to Sub-agents as well as to Master Agent.	1.0
RCC-HLF-023	RCC Enabler SHALL support reporting the status of Sub-agents, when requested by the Master Agent.	1.0
RCC-HLF-024	RCC Enabler SHALL support reporting of the Sub-agents who have provided services to a specified customer, when requested by the Master Agent.	1.0

Table 4: High-Level Functional Requirements - Master Agent and Sub-Agents management

6.1.5 Interaction between Customers and Agents

Label	Description	Release
RCC-HLF-025	RCC Enabler SHALL support application collaboration between Agent and customer.	1.0
RCC-HLF-026	RCC Enabler SHALL support web collaboration between Agent and customer.	1.0
RCC-HLF-027	RCC Enabler SHALL support file transfer from RCC Agent to RCC Customer and vice versa.	1.0
RCC-HLF-028	RCC Enabler SHALL support web Agent and real time communication Web-enabled web Agent (e.g. video communication between the Agent and the customer).	1.0

Table 5: High-Level Functional Requirements - Interaction between Customers and Agents

6.1.6 Subscriptions and notifications

Label	Description	Release
RCC-HLF-029	RCC Enabler SHALL support service subscription with specified parameters (e.g. some key words) for Enterprise Customers.	1.0
RCC-HLF-030	RCC Enabler SHALL support notification of aggregated messages (based on the parameters specified at the subscription) to Enterprise Customers	1.0
RCC-HLF-031	RCC Enabler SHALL support message filtering based on RCC Customer's preferences and service policies (e.g. RCC Customer does not want to receive advertising messages).	1.0

Table 6: High-Level Functional Requirements - Subscriptions and notifications

6.1.7 Network value added services

Label	Description	Release
RCC-HLF-032	RCC Enabler SHALL be able to analyse the messages transferred through the RCC platform and append additional information automatically based on the message content (e.g. attaching a snapshot of a web site from a URL, highlighting sensitive information such as banking details).	1.0

Table 7: High-Level Functional Requirements - Network value added services

6.1.8 Security

Label	Description	Release
RCC-SEC-001	RCC Enabler SHALL ensure that any Web 2.0 user information that is stored or exchanged is secured and thus is not accessible to unauthorized principal (e.g. unauthorized disclosure, usage, loss or corruption of user data are to be prevented).	1.0
RCC-SEC-002	RCC Enabler SHALL allow a Master Agent to set an IP address range for his/her Sub-agents. **Informational Note**: a Master Agent can set IP address range for his/her Sub-agents to prevent unauthorized login of Sub-agents. And the Sub-agents cannot login from an IP address if that IP address is not in the predefined range.	1.0

Table 8: High-Level Functional Requirements – Security Items

6.1.8.1 Authentication

Label	Description	Release
RCC-SEC-003	RCC Enabler SHALL support Agent authentication before providing service to customers.	1.0

Table 9: High-Level Functional Requirements – Authentication Items

6.1.8.2 Authorization

N.A.

6.1.8.3 Data Integrity

N.A.

6.1.8.4 Confidentiality

N.A.

6.1.9 Charging Events

Label	Description	Release
RCC-CHG-001	RCC Enabler SHALL support charging and settlement between RCC platform and Master Agent for Agent group.	1.0
RCC-CHG-002	RCC Enabler SHALL support settlement with Enterprise Customers.	1.0
RCC-CHG-003	RCC Enabler SHALL support charge customers based on the usage of the RCC enabler (e.g. based on number of RCC Agents rented by the Enterprise Customers).	1.0

Table 10: High-Level Functional Requirements – Charging Events Items

6.1.10 Administration and Configuration

Label	Description	Release
RCC-ADM-001	RCC Enabler SHALL support service configuration (e.g., add or change new key words) by Enterprise Customers.	1.0
RCC-ADM-002	RCC Enabler SHALL allow the RCC Customer to be provided with the historical service record(s).	1.0
RCC-ADM-003	RCC Enabler SHALL allow the RCC Service Provider to trace the RCC service procedures.	1.0
RCC-ADM-004	RCC Enabler SHALL provide the capability for the RCC platform to classify the RCC customers (e.g. willingness to pay, reputation), according to the service policies and the customers' preferences.	1.0
RCC-ADM-005	RCC Enabler SHALL provide the capability for the RCC platform to classify the RCC Agents (e.g. accordingly to price range, expertise level, reputation), according to the service policies and the Agents' preferences.	1.0
RCC-ADM-006	RCC Enabler SHALL support software update in both RCC Agent and customer sides automatically and manually.	1.0

Table 11: High-Level Functional Requirements – Administration and Configuration Items

6.1.11 Usability

N.A.

6.1.12 Interoperability

N.A.

6.1.13 Privacy

N.A.

6.2 Web 2.0

Label	Description	Release
RCC-WEB-001	RCC Enabler SHALL support aggregation of messages from Web 2.0 website.	1.0
RCC-WEB-002	RCC Enabler SHALL support duplication check for messages aggregated from Web 2.0 website.	1.0
RCC-WEB-003	RCC Enabler SHALL support queuing and distribution of messages aggregated from Web 2.0 website.	1.0
RCC-WEB-004	RCC Enabler SHALL support Agent access to raw messages aggregated from Web 2.0.	1.0
RCC-WEB-005	RCC Enabler SHALL support configuration of policies for Web 2.0 message aggregation and processing by Agent.	1.0
RCC-WEB-006	RCC Enabler SHALL support replying messages to the messages aggregated from Web 2.0.	1.0
RCC-WEB-007	RCC Enabler SHALL support differentiation of messages aggregated from Web 2.0 with different priorities.	1.0
RCC-WEB-008	RCC Enabler SHALL support answering and responding to Web 2.0 websites automatically.	1.0
RCC-WEB-009	RCC Enabler SHALL support prioritization of messages aggregated from Web 2.0.	1.0

Table 12: Web 2.0 Requirements

6.3 Virtualization and Multitenancy

Label	Description	Release
RCC-VIR-001	RCC Enabler SHALL support Multitenancy.	Future Release
RCC-VIR-002	RCC Enabler SHALL support RCC server multi-Tenant partitions Multitenancy at runtime.	Future Release
RCC-VIR-003	RCC Enabler SHALL support multiple Tenants' subscriber management and user profile management.	Future Release
RCC-VIR-004	RCC Enabler SHALL support the Agent client to be deployed in any connected device or terminal, e.g. mobile phone, fixed phone, smart phone, soft phone, computer, laptop, PDA, browser, TV, STB, UVE/VDI client, WebOS Client.	Future Release
RCC-VIR-005	RCC Enabler SHALL support capability negotiation between Agent client and RCC server, e.g. audio/video codec, screen size, network bandwidth, file format, Agent skills, WEB 2.0 supporting.	Future Release
RCC-VIR-006	RCC Enabler SHALL enable Agent client to seamlessly switch between devices or terminals within one application session. **Informational Note:** This requirement is targeted at the service layer. The network layer is out of scope.	Future Release
RCC-VIR-007	RCC Enabler SHALL enable dynamic service adaptation depending on the device or terminal capabilities (e.g. screen size, codecs) / network capabilities (e.g. bandwidth, bitrate), when switching between devices or terminals. **Informational Note:** This requirement is targeted at the service layer. The network layer is out of scope.	Future Release
RCC-VIR-008	RCC Enabler SHALL be able to monitor status, load distribution and resources consumption among each of the RCC functional components (e.g., CTI, IVR, and MRS).	Future Release
RCC-VIR-009	RCC Enabler SHALL support load balancing and failure recovering based on status, load distribution and resources consumption.	Future Release
RCC-VIR-010	RCC Enabler SHALL support the capability for the RCC provider to store service and application data to a specified environment (e.g. storing metrics data into an external file server).	Future Release
RCC-VIR-011	RCC Enabler SHALL support multi-virtual service providers. **Informational Note**: RCC virtual service provider can rent RCC platform capabilities from RCC constructor and the RCC virtual service provider can provide RCC services to customers.	Future Release
RCC-VIR-012	RCC Enabler SHALL enable RCC service provider to offer virtual instances providing the whole set or a subset of RCC capabilities to Tenants (e.g., the service provider will not allow the creation of Sub-agents).	Future Release

Table 13: Virtualization and Multitenancy Requirements

6.4 Network APIs

Label	Description	Release
RCC-API-001	The RCC Enabler SHALL provide a Network API to third-party applications that allows them to access RCC enabler capabilities, including at least: • virtual communication centre management; • monitoring and log management; • billing; • Agent application support; • IVR service assistance; • queue service; • data query and management; • resource schedule. **Informational Note 1**: these APIs are related to functionalities common to all instances running in the RCC platform. **Informational Note 2**: below some additional information: • virtual communication centre management includes Customer/Agent resource creation, update, portal management, etc; • Agent application support refers to provide a set of APIs for Agents for communication services including registration, login, operation, etc; • data query and management refers to provide a set of APIs for data operations, such as query, add, update, delete, etc; • resource schedule refers to provide a set of APIs, such as resource allocation, resource revoke, etc.	1.0
RCC-API-002	The RCC Enabler SHALL provide a Network API to third-party applications that allows them to access RCC enabler capabilities, including at least: • work flow management; • Agent leasing management; • outsourcing management; • search; • workforce scheduling; • knowledge base; • outgoing communication. **Informational Note**: these APIs are related to service control/ service management.	1.0

Table 14: Network APIs Requirements

6.5 Overall System Requirements

N.A.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-RD-RCC-V1_0-20161025-A	25 Oct 2016	Status changed to Approved by TP, TP Ref # OMA-TP-2016-0100-INP_RCC_V1_0_ERP_for_Final_approval

Appendix B. Use Cases (Informative)

B.1 Expert Agent

B.1.1 Short Description

Usually, there are numerous customers in society having various questions/problems while at the same time there are numerous experts in society who have abundant of expertise. However, it is usually difficult to find one right\proper expert for one customer and one expert cannot provide expertise to relevant customers since he/she doesn't know where the customers are. The following figures depict the problem that exists now:

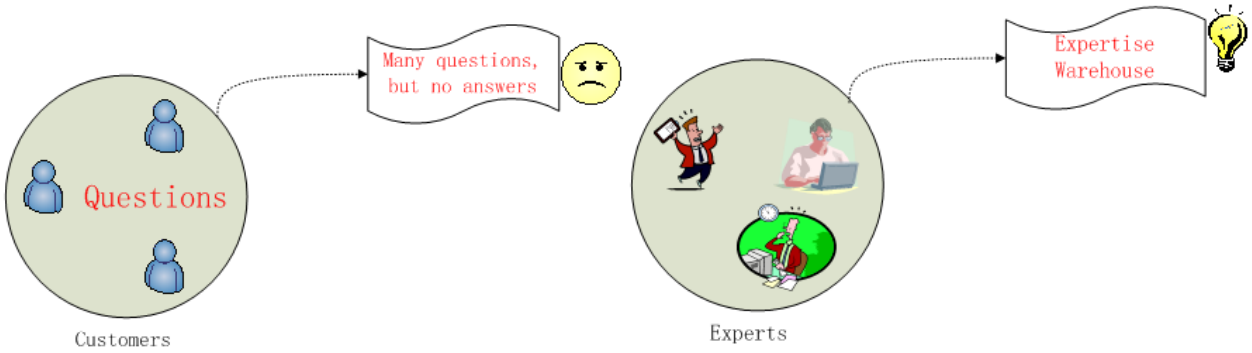

Figure 1: Example of current Expert Agent scenario

In order to solve the problem analyzed above, RCC can work as a platform where all potential social resources, e.g., expert Agents, can be aggregated and customers can find and acquire accordingly expertise easily and properly from the platform.

By taking advantage of RCC, any experts can register to RCC platform. During registration, they can specify the skills and expertise they have, and they can also specify any other information, such as policies and rate for service providing.

When one customer needs to acquire help, he/she can find accordingly information from RCC platform, and the RCC platform can intelligently find a most proper expert Agent for the customer based on his/her questions.

Additionally, RCC can also provide some extra features for both customers and expert Agents. For example, both customers and Agent can score and comment to their counter part. And both sides can get scores and comments of their counterpart before getting/providing services. As one of key features in RCC, expert Agents can charge service their customers when they provide service for customers.

The following figure depicts the scenario described above:

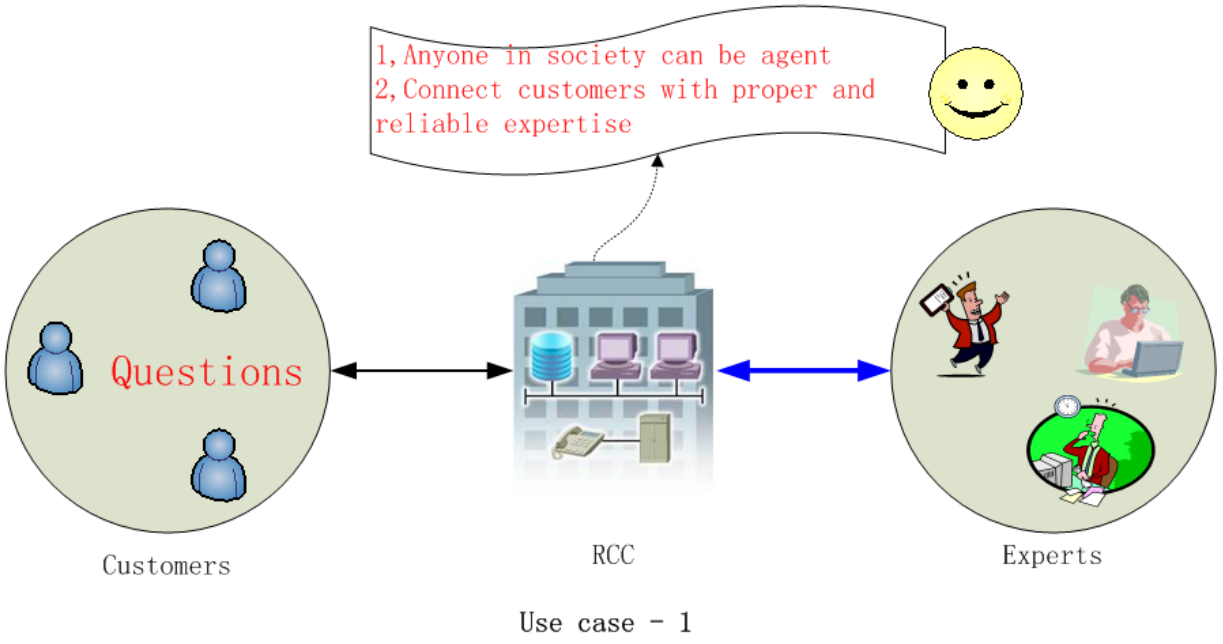

Figure 2: Expert Agent scenario as enabled by RCC

The following steps describe a conceptual flow for providing RCC-based services.

1. An Agent downloads a client software from website of RCC provider and installs it to his/her smart phone;
2. The Agent registers to the RCC, specifying what kind of knowledge/skills he/she has (e.g. psychological counselling, dietician) and rate for charging as well. During registration, authentication may also be performed by RCC provider for reliability and security.
3. RCC provider's website can optionally show Agent's information on portal.
4. A customer asks service from RCC and the RCC finds one proper Agent manually or automatically (e.g. IVR), or the customer can also find services directly from the portal.
5. RCC can queue the request from the customer in case the Agent is busy and connect both the customer and the Agent when the Agent is available.

RCC provides flexible and justified ways for charging before, during or after service providing.

B.1.2 Market benefits

The use case is to enhance the value of RCC by allowing the industry to aggregate all potential resources, e.g., expertise, and provide RCC relevant services to any customers in reliable and flexible way.

Therefore, market benefits will be the following:

Customers:

- They can find more reliable and professional answers from RCC;

RCC Provider (Operators/Carriers):

- They can aggregate all resources in society and act as an influential service broker for whole society.
- They can share profit with expert Agents.

Agent:

- Agent can take advantage of the reputation and influence of RCC provider to attract more customers. And get considerable profit by providing services to customers.

B.2 Web 2.0-oriented RCC

B.2.1 Short Description

With Web 2.0 booming in recent years, there are numerous typical Web 2.0 applications (e.g., Facebook, twitter) rising which attract tens of millions of users. And one very common fact is that when users have complaints or problems, they usually are inclined to complain and publish blogs\micro-blogs on these websites which may spread vastly in a short period and induce comparative side effects. In some cases, these blogs might exert negative impact to some enterprises if they cannot tackle with it timely or properly. For example, a use may complain a newly bought phone on his/her blog if he/she meets with some problems and the blog may spread out instantly in cyber space.

By taking advantage of RCC, all relevant messages (e.g. blog, micro-blog, comments) with specified characteristics from specific websites can be aggregated by certain RCC functions, e.g. dedicated gateway, connecting both Web 2.0 and RCC server, and then the messages can be delivered to RCC platform for further processing (e.g. filtering, queuing and distribution) and finally, the processed message can be distributed to dedicated Agents who can deal with it timely and properly. For instance, one Agent can reply with a message under original message on web page to give explanation or the Agent can contact with the customers to help them to solve the problem or apologize and ask for forgiveness, which will undoubtedly decrease possible and potential negative impacts to the enterprise consequently.

The following figure depicts problem that exists for the time being:

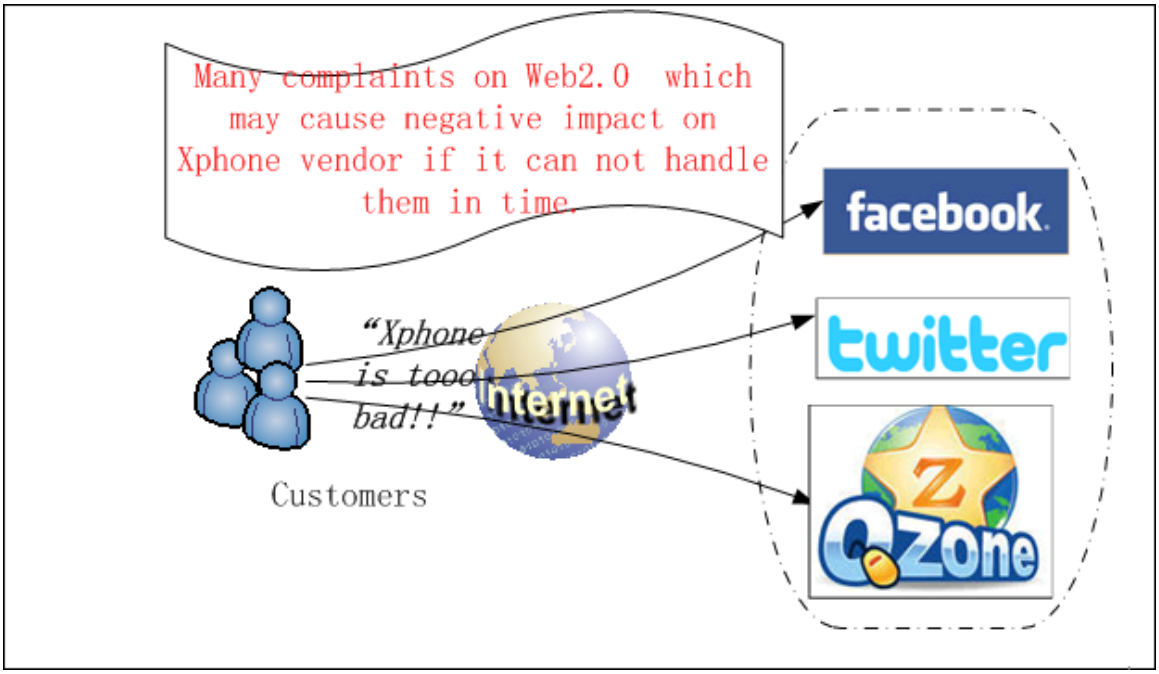

Figure 3: Example of current Web 2.0 scenario

The following figure depicts the use case to solve the problem described in the above mentioned figure:

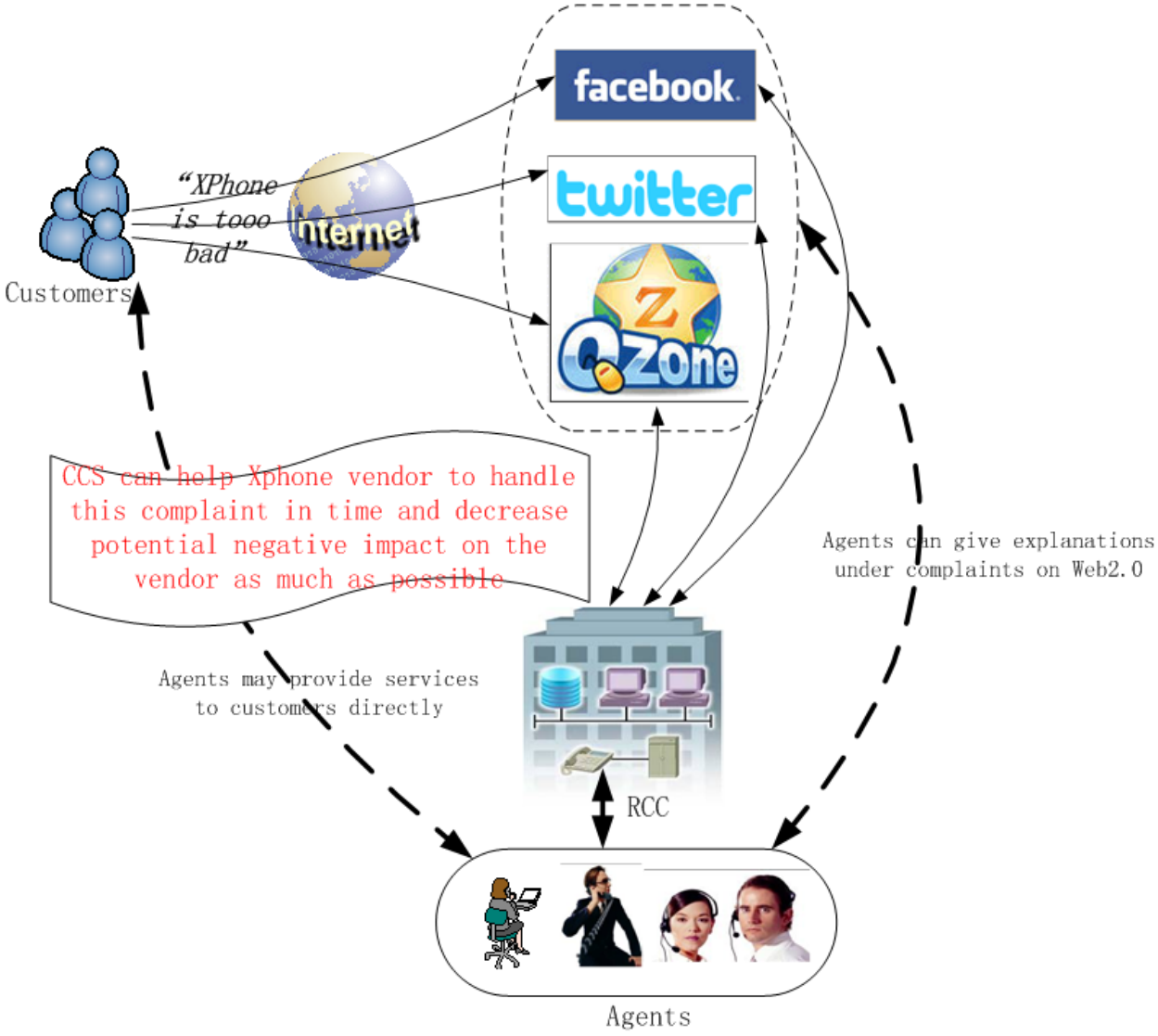

Figure 4: Web 2.0 scenario as enabled by RCC

The following steps describe a conceptual flow for providing RCC-oriented services.

1. An Xphone manufacture contracts with RCC provider for dealing with any Xphone-related messages on some specified or all, websites and some certain policies can be configured by RCC provider internally or by Agents for aggregating messages.
2. One customer buys an Xphone, and finds the phone has some problems. Then he/she publishes a blog message – "Xphone is too bad!" – on his/her blog, e.g. Facebook, twitter, which can spread instantly among his/her friends and friends of his/her friends, so on so forth.
3. RCC aggregates all kinds of Xphone-related message from websites and filters and queues the received messages based on their types and distributes these messages to relevant Agents for further process if there is any Agent available.
4. Agents can be hired by RCC provider or by Xphone manufacture, the Agents can deal with these messages by:

d1: contacting directly with the customer, for example, the Agent can apologize to customer and help the customer to solve the problem, and finally he/she may kindly ask the customer to remove or modify the message from his/her blog/micro-blog.

d2: leaving a message of explanation under original message.

B.2.2 Market benefits

The use case is to extend traditional contact centre to cover more types of services in market especially in the background of Web 2.0.

Therefore, market benefits will be the following:

Customers:

- Enterprises: they can solve problems caused by Web 2.0 and grab possible chances as well.
- Individuals: their complaints can attract attention from enterprises and their problems can be solved accordingly.

RCC Provider (Operators/Carriers):

- They can provide Web 2.0-oriented RCC services for Enterprise Customers.

Agent:

- Agent can be hired by each specific enterprise and trained with specific and professional kills.

B.3 RCC Agent and Sub-agent

B.3.1 Short Description

Mobile Agent is one of the key features in RCC where a new business model is introduced, that is, everyone in society can register to RCC platform to become an Agent and accordingly the Agent can also share profit with RCC platform when the Agent provides RCC service to customers.

Along with the development of RCC service, there will have more and more customers requesting service from the RCC Agents, and sooner or later, one single Agent will face with request overload. If the Agent has no enough capabilities to cope with many Agents simultaneously, the Agent may lose the customer. Hence in RCC, the Agent requires the RCC platform to support the capability of creating Sub-agents which can be correlated with the Master Agent (creator Agent), and an Agent group including both Master Agent and Sub-agents are created.

In this group, the Master Agent can manage and monitor all other Sub-agents, and the master can settle with the RCC provider separately.

B.3.2 Market benefits

The use case is to enhance the value of RCC by allowing the RCC Agent to expand their business. By taking advantage of RCC, a master RCC Agent can employee one or more Sub-agents to extend the capability of one single Master Agent.

Therefore, market benefits will be the following:

Customers:

- They can be accommodated with better services and decrease the time to wait in queue.

RCC Provider (Operators/Carriers):

- They can help RCC Agent to expand their business and increase the revenue, and increase the profit as well.

Agent:

- They can extend their capability to better serve customers and increase their profit accordingly.

B.4 Collaboration

B.4.1 Short Description

RCC customers can access RCC services through various ways, such as voice, video, web. In order to improve the quality of customer experience, the RCC Enabler can support collaboration between RCC customers and RCC Agents. For example, when a RCC customer requests navigation service from a RCC Agent, sometimes, it is quite difficult for the RCC Agent to describe detailed route information to the RCC customer by voice or video. Obviously, it will become easier if the RCC Agent uses service collaboration (e.g. application collaboration, web collaboration) to show the route to the RCC customer. In such way, the RCC customer can obtain the route guidance from the RCC Agent more efficiently.

B.4.2 Market benefits

This use case aims to enhance the value and usability of RCC services by allowing the RCC Agents to collaborate with the RCC customers directly.

Therefore, market benefits will be the following:

For RCC customers:

- They can obtain RCC collaboration from RCC Agent with enhanced user experience.

For RCC provider (operators/carriers):

- They can attract more customers through the improvement of RCC customer's experience.

B.5 Enterprise Customers

B.5.1 Short Description

In order to trace any types of information regarding Enterprise Customers themselves on web pages, they can acquire specified types of information from a communication centre (e.g. customer-care centre, call centre). Usually, they have contract with the customer centre provider in advance. And in the contract, some detailed information is subscribed, for example, the key words, duration, etc and then the customer will pay money to the provider based on certain criteria.

Along with the business expansion of RCC, the RCC providers may have hundreds of or even more Enterprise Customers, and hence it is not practical to have contracts with each individual Enterprise Customer. And the RCC can provide Enterprise Customers with standardized interfaces. And the Enterprise Customers can access the RCC services based on Web 2.0 through those standardized interfaces without the necessity to have a contract with the RCC provider on site, the enterprise customers can subscribe RCC services with specified parameters (e.g. some key words) and also add or change such parameters later on; afterwards, the Enterprise Customers will be notified of aggregated messages (based on the parameters specified at the subscription).

B.5.2 Market benefits

The use case is to enhance the value of RCC by allowing the RCC Enterprise Customers accessing RCC service through standardized ways.

Therefore, market benefits will be the following:

Enterprise Customers:

- They can access RCC service through standardized interfaces.

RCC Provider (Operators/Carriers):

- They can provide more flexible, cost-efficient RCC services to Enterprise Customers.
- They can increase profits through the attraction of more Enterprise Customers.