Nikolay Anisimov: *What are Your Agents Focused On?*

The notion of agent focus helps us identify what agents are working with and what is their occupancy at each moment of time.

The simultaneous handling of contact center interactions of different media types becomes very important in today's contact center environments as agents multitask more and more. Indeed, they work with different customers, with different interactions, and utilize different applications. To improve customer service, this multitasked activity must be optimally arranged, increasing agents' productivity and utilization while reducing the overall total cost.

In our previous article we considered some aspects of distributing several interactions to a single agent. In this article we introduce the notion of *agent focus*, enabling us to know what an agent is doing during each moment of time, what customer they service, and what channel they employ. We will also address key performance metrics such as agent occupancy in multichannel and multi-contact environment.

What is *agent focus* and why is it important?

In contemporary contact centers, each agent must be able to handle multiple customer interactions across different channels. This philosophy alone substantially increases contact center performance by improving agents' productivity and utilization as agents work with several customers simultaneously. Moreover, with the expansion of the *rich contact experience* paradigm, working with each customer becomes richer and richer as it may comprise exchanging multiple interactions of different media types in any order or even in parallel.

Let us consider an example shown in Figure 1 below. Agent Bob is working with three customers simultaneously.

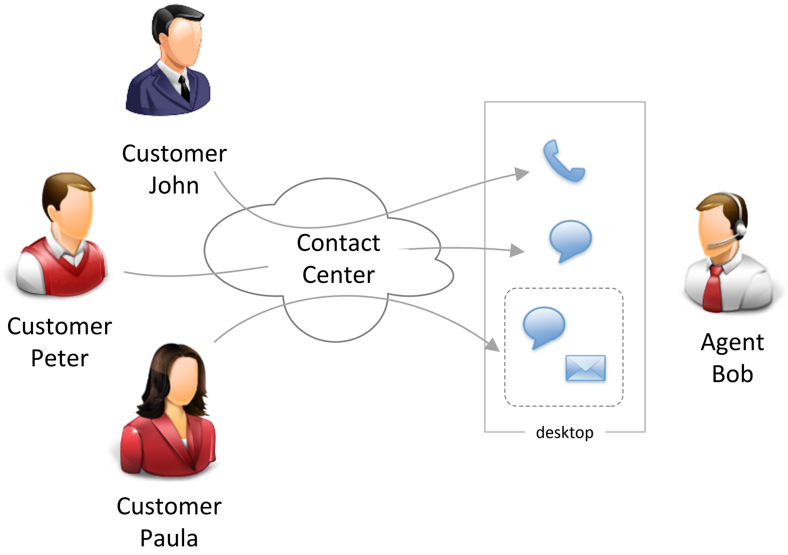

Figure 1: Agent working with three customers and four interactions

Bob handles a web chat message received from customer Peter. He also participates in a phone conversation with John. At the same time he helps Paula; working with her email and conversing via a web chat. The main reason why such situations involving multiple interactions are possible is the very nature of these new media types which do not completely occupy an agents' attention and provide the opportunity for other simultaneous activities. For example, a well-trained agent may handle two or even more chat sessions simultaneously without a measurable degradation of service level.

In such circumstances, we should be able to determine what an agent is doing at each moment of time, what portion of their time is spent with each customer, what is their occupancy during each time period, etc. Answers to these questions will allow us to optimally organize quality management, real-time and historical reporting, as well as enhance the routing of incoming interactions.

How to track *agent focus*?

In a multichannel contact center environment agents' behavior has been changed dramatically. To cope with issues of scheduling agents' work, we've introduced a new tool that will be referred to as the Agent Focus Model (AFM).

The environment where AFM operates is depicted in Figure 2 below.

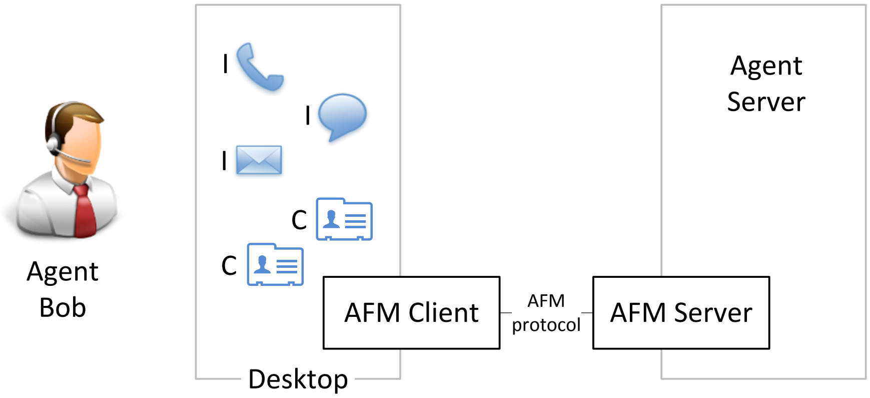

Figure 2: Agent Focus Model environment

An agent works within his/her desktop application controlling several customer interactions (I) and contacts (C). An agent's desktop contains an AFM client, a component that monitors the agent's focus by listening to or watching events from interactions and reports any focus changes to the AFM server. Specific mechanisms of focus monitoring are implemented with the aid of user interface capabilities available in the desktop environment.

The AFM client and server communicate directly with each other through a special protocol. The main function of this protocol is to inform the server about any agent focus change. For example if an agent switches from one customer contact to another (e.g. by switching from one tab to another) the AFM client captures this change from the corresponding user interface components and sends a protocol command to the AFM server indicating that the agent's focus has been shifted to a new customer contact. As a result, the AFM server updates a corresponding object status.

The AFM server maintains an AFM object model and supplies the corresponding information and data to external applications (e.g. reporting application).

The AFM object model is comprised of the following objects (see Figure 3 below):

- Agent
- Contact
- Interaction (I or Ixn)
- Agent's Contact (AC)
- Contact's Interaction (CI)

An agent may be associated with several contacts, each contact being represented by one customer. An association between an agent and a customer is represented by the object AC. This object exists only when the corresponding association exists.

A contact may be comprised of one or several interactions. All of these interactions are between the agent and the same customer. Each of these associations between a contact and an interaction is represented by an object CI.

An agent may be associated directly with some interaction that does not belong to any contact. For example, this may be an internal voice call.

The object CI operates in correspondence with a state machine (SM). The SM of the CI object is depicted in Figure 4 below. The SM has three states:

- Active/In Focus
- Active/Out of Focus
- Inactive

The first state "Active/In Focus" corresponds to the situation where an agent explicitly works with a correspondent interaction. For example, the agent types a message in a chat window. Clearly, such an interaction is considered to be active and being in focus of the agent.

The second state "Active/Out of Focus" corresponds to a situation where an agent works with something else but the interaction is still active and waiting for an agent's or customer's input. For example, a chat session is in this state when the agent works with another chat session and this chat session is still active but not in the agent's focus.

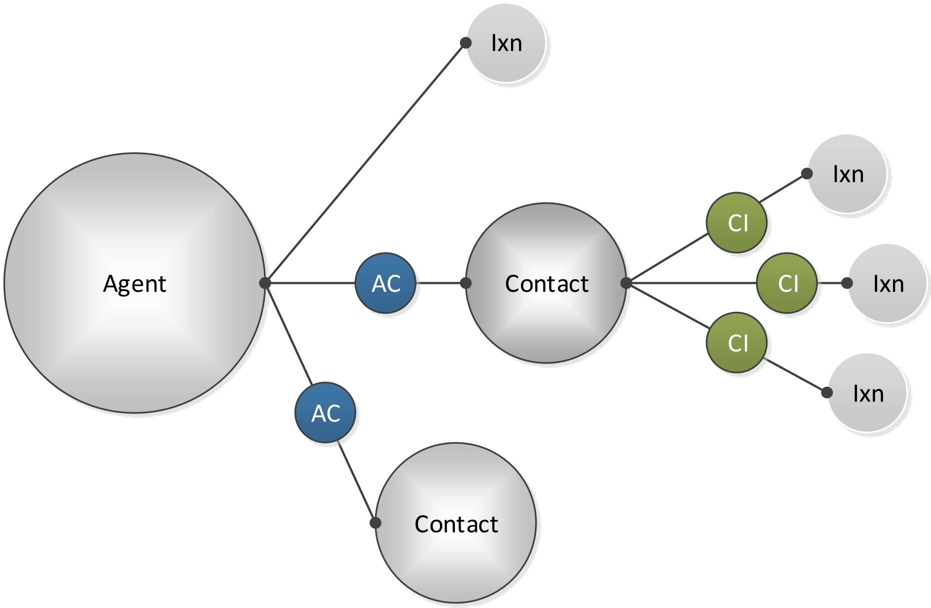

Figure 3: Object model

The third state "Inactive" corresponds to a situation when an interaction handling is postponed but still assigned to the agent. This state is typical for interactions with deferred media types such as email.

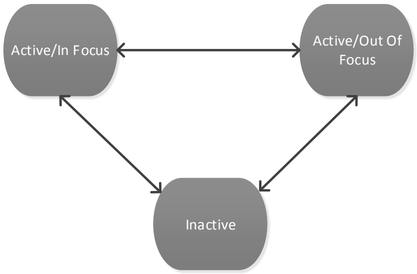

Figure 4: State machine of AC and CI objects

What about agent metrics?

Introducing multiple channels and simultaneity in interaction handling radically changes agent metrics and statistics landscape. Existing and well known-metrics must be modified to reflect changing methods of agent operation.

Let us consider three of the most important metrics and discuss how they will be changed.

Agent "busy status" is a metric stating whether the agent is able to receive a new interaction or not. In the new environment this metric becomes more relative and depends on the type of interaction to be distributed. For example if an agent is working with an email they could be busy for another email but available for a voice call.

The agent metric "idle time or ready time" indicates how much time an agent is in that state and normally is used for routing interactions. In the new environment this metric also depends on the type of interaction to be distributed. Thus the idle time now reflects the time interval when the agent was able to accept an interaction of this media type.

The metric "agent occupancy" plays an important role in contact center analytics as it characterizes agents' utilization. In conventional environments, agent occupancy is defined as a fraction of busy time to logged-in time (sans not ready/breaks) and is usually expressed in percentages. In multichannel and rich contact environments the definition of agent occupancy requires some enhancement. Indeed, working with a single chat may not be considered fully occupied because the agent can receive another chat session and work them simultaneously.

To solve this problem we assign each media type a degree an interaction contributes to the entire occupancy. For example, a chat could have a weight of 1/3 if the maximum number of chats is 3. Normally, for voice and email the weight is equal to 1. The total occupancy for some period of time (e.g. agent's shift) is calculated as a sum of each time interval's occupancy divided by agent's total working time.

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We at Bright Pattern, are advocating a new paradigm of *rich contact experience* and believe that contacts between customers and contact centers will become richer and richer that will radically improve quality of customer service. To make this happened we propose a new approach to arranging agents' work, improve their productivity and utilization.