De-Materializing Local Public Administration Processes

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Abstract. We describe a framework for the de-materialization of local public administration processes that provides remote assistance by human operators when needed. Our framework is in an advanced state of development and will be tested in several municipalities of the province of Trento (Italy).

Like many European countries, Italy is merging little municipalities into districts in order to streamline local services, re-organize staff, and reduce indirect costs [4]. As local services get relocated to municipalities chosen as district leaders, citizens face longer trips and increased inconvenience in accessing services. This situation has triggered research [1, 2] on technologies able to de-materialize Local Public Administration (LPA) processes, providing remote access to them via smartphones or special-purpose access points located in schools, shopping malls, and shops. Experience has shown that citizens used to face-to-face interactions find hard to access LPA processes via Web sites. Whenever processes involve choices that may generate a penalty (for instance, paying a local tax) users require the assistance of a human [3, 4].

Our solution relies on a platform that executes all LPA process steps remotely, calling in a human operator when necessary. The level of assistance is context-dependent, i.e. takes into account the task at hand, the logistics of the point of access, the age, hearing and eyesight capabilities of the user as well as the current state of the Internet connection and access devices. If the user looks uncertain or confused, the remote assistance gets activated automatically without waiting for the specific request.

In our system, LPA processes are described using BPMN. The standard BPMN palette has been extended with specific elements associate to proprietary scripts capable to detect and activate the right assistance level and send direct commands to I/O devices (printer, scanner, ...). We defined a set of heuristic rules [5] that evaluate the context (for instance `ConnectionQualityLevel`

> 3) and decide the action to deal with it, e.g. `StartAudioCall`. Our rules are written as annotations to the BPMN diagram. Fig. 1 shows an extended BPMN diagram, where icons in the upper left corner of each activity determine the type of rule implemented in the activity.

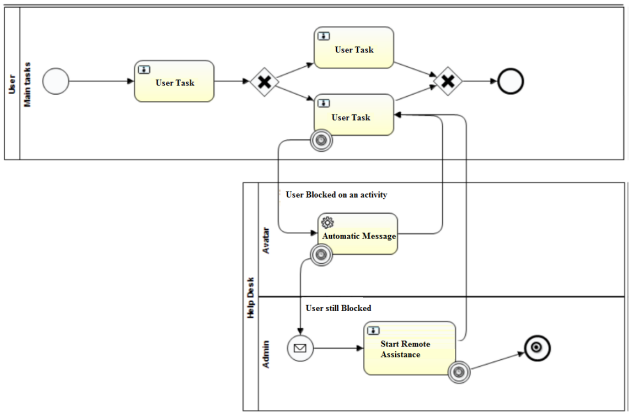

Fig. 1. Example of enriched BPMN diagram.

Conclusions and Future Work

Our solution for de-materializing LPA processes preserves human assistance to users. Our BPMN extension expresses the interaction types that can be activated for each activity.

References

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