研究成果の概要（和文）：本研究は、ソーシャルプロジェクトマネジメントのための集合知（CI）指向のインフォメーションナレッジウェアプラットフォームを構築した。それは、異なるプロジェクトマネジメントに関するウェブサービスを統合し、協力的な意思決定のコンポーネントを利用により共有したフレキシブルなプロジェクトマネジメントの知識を提供した。 （1）ディスカバーコンテンツ及び集合知抽出サービス、このサービスは、各プロジェクトチームにおいてセマンティックに相互運用可能であり、集合的に分類し、自己反映する集合知である。 （2）クラウド化されたサービスとして、（3）利用者の経験に基づいた収集サービスの開発を行った。
1. Research Beginning Background

In dynamic and demanding project ecosystems, project management deals with many challenges. Changes in scope of projects are the most important challenge that organizations face in managing projects. Scope management often requires intelligence adjustments [a] to cost, time, quality, risk or other project deliverables. On the other hand, projects are resource-oriented ecosystems competing mainly for people, money, and time. In these dynamic ecosystems, collective intelligence becomes a vital enhancement of project management. Different applications to fulfill the project goals should be able to customize themselves according to different conditions of project. Integrating these tools helps to extend the capabilities of individual software applications.


The project target was 3 services: (1) The Collective Intelligence Extraction Service to handle semantic interoperability, collective categorization and self-referential collective intelligence among the project team. It impacts the workflow management between project team (e.g. knowledge producers and consumers), (2) The Collective Intelligence (CI) Organizing Service from social project management. This service provides a way to organize the Collective intelligence according various contexts (know-who, know-what, know-why, know-when, know-where, and know-how), and based on Universal Semantic Locator indexing and management, and (3) the Interaction Service. This exposing and natural service focused on user experience based on contextual, personalized CI-based experiences and interactions including semantic navigation with the different layers of knowledge.

The project target users was a community grouping 10 institutes: University of Michigan–Dearborn (USA), Sacred Heart University, Fairfield CT (USA), CTI (Brazil), burgundy university (France), Munster University (Germany), CNR (Italy), Institute of Mathematics and Informatics (Bulgaria), Antonine University (Libanon), Kasetsart University (Thailand), and Bishop Heber College (Autonomous) India.

2. Research Objectives

The objective of this study is to implement a model for using the Collective Intelligence (CI) as a service in the management of projects in a collaborative environment. The model is developed based on the cloud computing infrastructure and includes the following components: (a) the CI Extraction Service to handle semantic interoperability, collective categorization and self-referential collective intelligence among the project team, (b) the CI Organizing Service from social project management, and (c) the Interaction Service.

3. Research Methods

The research methodology consists of the following steps: (a) Identifying the requirements and use cases for social project management in terms of the three project streams (WP4-1, WP4-2, WP4-3), (b) defining requirements and providing a list of steps detailing how each target service will be used, (c) analyzing the computational underpinning of the CI properties as a service based on the NII cloud and including...
Collective Intelligence (CI) services in the target platform.

Fig 1: Platform architecture

WP4-1 implemented and enhanced CIPM Extraction services with the CI universal extractor from social project management contents.

WP4-2 focused on the extraction process of the Uniform Semantic Locators from the project related documents.

WP4-3 implemented and enhanced a specific model by deploying and exposing user personalization based on Media-centric user interfaces for social project management (ISO 9241).

WP5 focused on User experience and assessments.

WP6 identified success metrics and indicators relevant to CI-based social project management; user data obtained from interviews, questionnaires, direct feedback, as well as from identified interaction patterns.

WP1 covered all aspects of project management and control. It ensured that the project successfully achieved its stated objectives on time and within budget and also the collaboration with the project partners.

WP2 managed with the task of how the deliverables of the project could be best exploited for maximum benefit.

WP3 sought early acceptance of the project with key industry stakeholders. We leveraged networks and interest groups to support development and dissemination activities, and we promoted the project outcomes to identified target markets through events, promotional activities and dissemination activities.

4. 研究成果
The main result of the project is a testbed to validate scalable collective intelligence services for enhancing social project management. The research demonstrated the feasibility of CI-based social project management and assess the platform usage by organizations in large-scale use cases (SME communities, research communities). In 2016, the project members became part of the research data alliance (RDA) to data standard.

This project built up a community of users, thanks to the Network of Excellence on Social Project Management (Communigram-net 2011-2014) and the Brazilian "Science without Border" research project "Collective Intelligence for Project Management in collaborative Systems" no 400730/2012 (CNPq).


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