

**科学研究費助成事業 研究成果報告書**

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研究課題名(和文) Collective intelligence-based social media management

研究課題名(英文) Collective intelligence-based social media management

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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CI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)CI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。

研究成果の概要(英文)：The project delivered a collective intelligence (CI) oriented information knowledgeware platform for social project management. It integrates different project management-related CI web services and provide flexible project management knowledge sharing by using a collaborative decision making component. Three services have been developed: (1)Discovering content and collective intelligence extraction service. This Collective Intelligence extraction service focuses on the semantic interoperability, collective categorization and self-referential collective intelligence within each project team, (2) the CI Organizational service. This service manages the Collective intelligence organization service based on CI (know-who, know-what, know-why, know-when, know-where, and know-how) Universal Semantic Locator indexing and management, and (3) a user-experience collector service.

研究分野：ソーシャルメディア

キーワード：集合知 ソーシャルプロジェクトマネジメント ソーシャルトランスルーセンス セレンディピティ

## 1. 研究開始当初の背景

In dynamic and demanding project ecosystems, project management trend 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 resources-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.

[a] Muhammed Al-Sudairi, Abdullah S. Al-Mudimigh, Zahid Ullah, "A Project Management Approach to Service Delivery Model in Portal Implementation," *isms*, pp.329-331, 2011 Second International Conference on Intelligent Systems, Modeling and Simulation, 2011

## 2. 研究の目的

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.

## 3. 研究の方法

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. The WP3 aimed at identifying, developing and setting up use cases and scenarios describing how to achieve social project management requirements in term of collective intelligence regarding the three project streams (WP4-1, WP4-2, WP4-3). Each scenario defined the requirements and provided a list of steps detailing how each target service will be used.

WP4-1, WP4-2 and W4-3 addressed the computational underpinning of the CI properties as a service based on the NII cloud (所内クラウド) and included

Collective Intelligence (CI) services in the target platform.

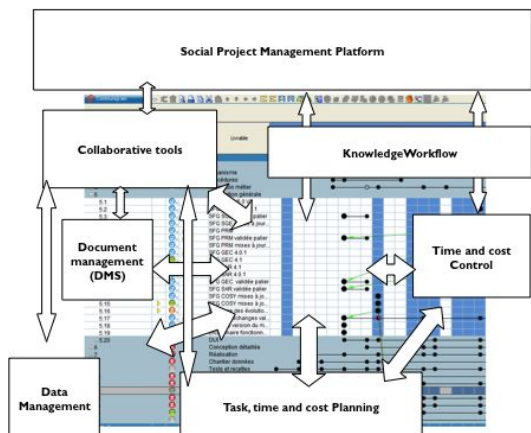


Fig 1: Platform architecture

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

This workpackage focused on the extraction process of the Uniform Semantic Locators from the project related documents.

WP4-2 focused on the Implementation and enhancing CIPM organization services of social project management contents based on CI-map based Uniform Semantic Locators. This workpackage implemented the semantic adaptable process to organize the project related knowledge according to CI-map based Uniform Semantic Locators.

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). This work package addressed the needs and requirements of users regarding media-centric interface for project management. It focused on the

users' perceptions and responses that result from the use of our Collective Intelligence-based social project management (See the overall platform in Figure 1). Same as in WP3, WP4-1, WP4-2 and WP4-3 followed the “Iterative and Incremental development” methodology.

The 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. It formed the core of the overall assessment and, on their basis, a set of recommendations and guidelines were generated in the last phase of this WP. 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. We investigated needs and expectations of potential target groups and stakeholders. We 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 400730/2012-0 (CNPq).

#### 5. 主な発表論文等

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CI@PracticeDay Community

<http://www.cti.gov.br/CI-PracticeDay/tiki-index.php?page=HomePage>

〔産業財産権〕

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