

Department of Industrial Engineering & Management

DYNAMOD – A Dynamic Agent-Based Modeling Framework for Digital Business Models

UNIDEMI



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Objectives

- Development of an Agent Based Modeling Framework that is flexible and customisable to model diverse business elements of a Digital Business and captures the interaction between online users (Fig 1) . This can be used for business forecasting and simulation of business scenarios.
- Compilation of State of the Art research in complementary research areas.
- Develop a methodology to collect market/business data for accurate initialization of the model.
- Test and validate the applicability and forecasting accuracy of the model for various Business Cases.

Methodology

- Published and unpublished literature on Business Model Research, Agent Based Modeling, and Characteristics of Digital Businesses, have been collected (Fig 2). The rules, observations, business model representation and insights have been incorporated while designing and developing the DYNAMOD model.
- A modular framework has been adopted to develop the Agent Based Modeling Framework(Fig 3). This enables flexibility and customisability with various business models as appropriate features can be invoked.
- Collection of data from various Business Cases for model validation is underway.

Expected Results

- DYNAMOD is expected to aid Business Managers and Researchers by providing a comprehensive tool for dynamic representation of Business Models and Market Conditions. Simulation capabilities would enable forecasting Business Growth, perform competitor analysis, and test the impact of various business decisions and environmental scenarios.
- As an application scenario, we applied DYNAMOD to Facebook, and predicted the growth of users to a very high degree of accuracy. The results are under publication.
- Application to other Business Cases are under progress and we aim to validate the model through a large number of case studies.

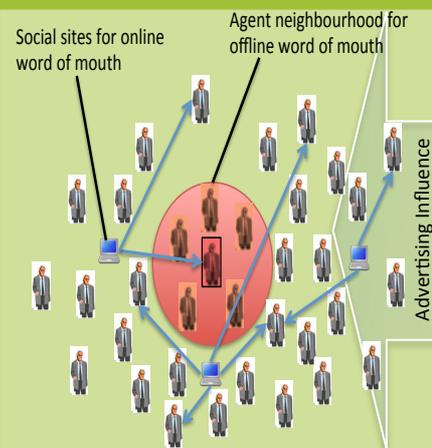


Fig. 1 Agent-Based Model representing consumer agents and sources of influence

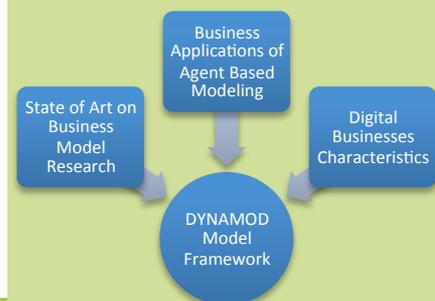


Fig. 2 Complementary Research Areas leading development of DYNAMOD Model Framework

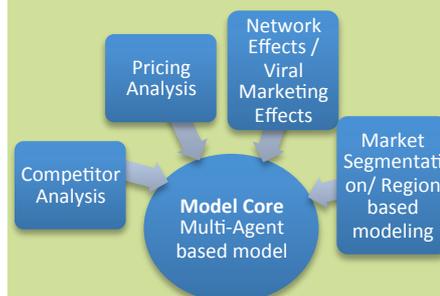


Fig. 3 DYNAMOD Modular Component Architecture

Funding:

