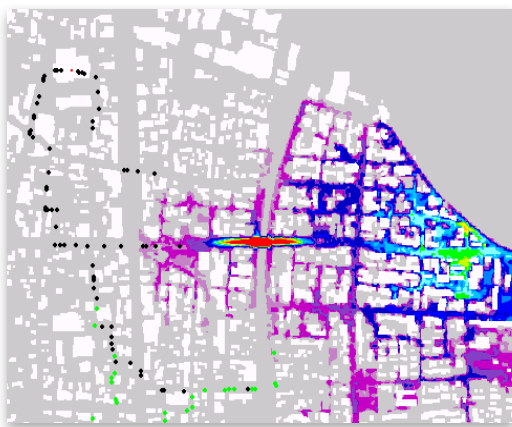


## Support of artificial societies on computer decision-making

### Complex Approach

- ◆ What caused this problem? When and how can it be solved? It is difficult to find the answer in such complex societies. The Complex Approach can construct the artificial societies on the computer, and discover the social phenomenon (**emergent phenomenon**) that couldn't get in the traditional analysis techniques.



River flood evacuation model

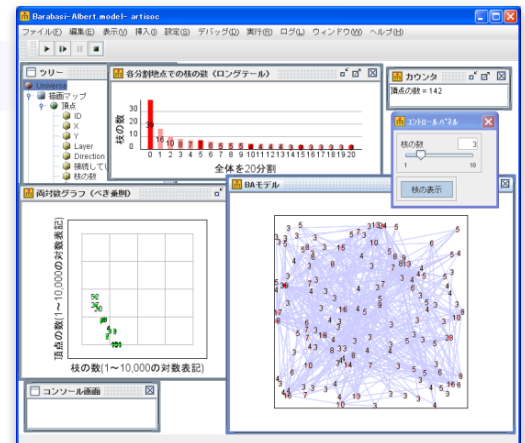
- ◆ Many agents who have individual decision-making rule exist at the artificial societies, and they can act and accumulate experience. Based on each value, most agents interact concurrently, and the society will emerge.
- ◆ It is possible to learn trial and error what influence can happen in the whole society, **when and what will be done (or not)**.
- ◆ **artisoc** support **the decision-making of the hypothesis verification type that depend on bottom up** based on the assumption of deciding the society by interaction of individual decision-making, and changing at the time.

### Complex Simulator 『artisoc』

To spread the method of the agent based simulation which is the complex approach, KOZO KEIKAKU ENGINEERING Inc. (KKE) is expanding various business performance. KKE also developed the complex simulator 『artisoc』 for many users as decision-making and analysis tool. 『artisoc』 can simply build up a model.

#### Major Activities

- ◆ Year 2000 Agent based simulator 『KK-MAS』 release
- ◆ Year 2000 『GROWING ARTIFICIAL SOCIETIES』 publishing seminar
- ◆ Year 2001–2005 MAS competition (1st – 5th)
- ◆ Year 2005 International Workshop ( The University of Tokyo )  
『Multi-agent simulation and Method of Social Science』
- ◆ Year 2006 Complex Simulator 『artisoc』 release
- ◆ Year 2006-2014 MAS competition & artisoc tutorial (6th – 14th)
- ◆ Year 2007 Symposium ( The University of Tokyo )  
『Artificial Societies Possibility-Multi-agent simulation and Social Science』
- ◆ Year 2015 MAS coference 2015 & The 15th MAS competition
- ◆ Year 2016 The 16th MAS competition & artisoc tutorial



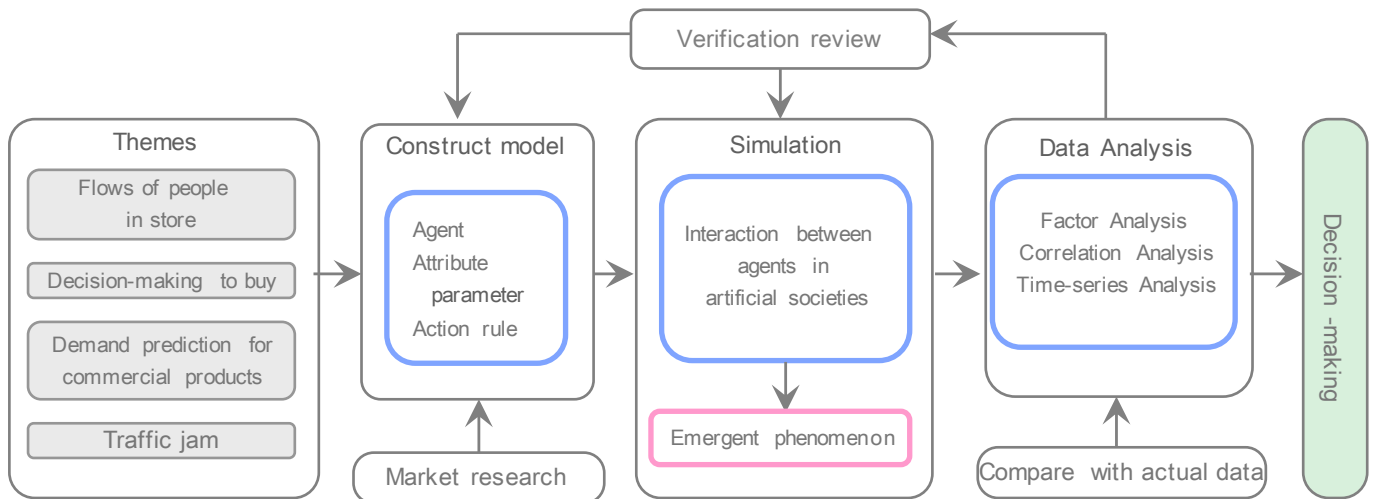
Long tail model

#### Major Records

- ◆ Educational support → collaboration with 635 academia clients
- ◆ Report the results of studies in academic society, workshop  
Passenger Marketing study competition Encouragement Prize (KK-MAS)  
The Operations Research society of Japan Society Award (KK-MAS)
- ◆ Related books  
『GROWING ARTIFICIAL SOCIETIES / by EPSTEIN 』 (Japanese translation )  
『コンピュータのなかの人工社会』 ( MAS collected papers )  
『人工社会構築指南』 ( Susumu Yamakage )  
『artisocで始める歩行者エージェントシミュレーション』 ( Toshihiro Kaneda, KOZO KEIKAKU ENGINEERING Inc. )

# Complex Consulting

KKE provide business consulting with using the simulator 『**artisoc**』 .



## Institutional Design, Policy Evaluation

Liberalization of electricity trading simulation  
 Effective employment policy simulation  
 International emissions trading simulation

## Disaster-prevention, Evacuation, Traffic

Hazard map  
 ( earthquake, river flood, tsunami, fire evacuation)  
 Waterborne aid delivery in disasters simulation  
 Initial evaluation simulation of advanced safety driving support system

## Human Action

Audience rating prediction simulation  
 Operational efficiency improvement at pharmacy simulation  
 Counting flows of people· congestion at mall simulation  
 Kid's playing group forming simulation

## Assessment of Environment

Cell phone traffic control simulation  
 Recycle process simulation for construction waste  
 Urban infrastructures· maintenance simulation

# Products lineup

|                                    | artisoc standard  |  | artisoc textbook                                      | artisoc player                         |
|------------------------------------|---|--|---|--|
| Target user                        | Corporate business<br>Administrative agency   | Academic<br>(student, faculty member)  | All user  | All user                               |
| Simulation function                | ○   | ○                                      | ○ ( rule: max 200 lines,<br>In-out filename limited ) | △ ※ 2<br>( only binary model )         |
| Model function                     | ○   | ○                                      | ○   | ×                                      |
| Debug                              | ○   | ○                                      | ○   | ×                                      |
| Script Support<br>Database linkage | ○   | ○                                      | ×   | ○                                      |
| Language                           | Japanese / English ( available attached documents for each language )                       |  |   |  |
| Hardware requirements              | Windows 10/8.1/8/7, OS X 10.11(El capitan)/10.10(Yosemite) ( running in Java1.6.0 or more ) |  |   |  |
| Price                              | Contact us for pricing  | free ( available from<br>HP download ) | Attached book ※ 1                                     | free ( available from<br>HP download ) |
| License key                        | need  | need                                   | no need   | no need                                |

※ 1 Book 『人工社会構築指南』 『artisocで始める歩行者エージェントシミュレーション』 ※ 2 standard can save as a binary model

