

Game Theory in Business: Implications for Professional Practices

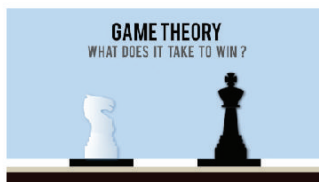


Incomplete information leads to a sense of uncertainty while making decisions, and that's why it's important to interact with those involved in the decision-making process. Ignoring such interaction can lead to losses at worst, and a less efficient outcome at best. It's important to get the interaction right, because if there's conflict between parties, a satisfactory agreement will not be reached, and that's not good for anyone involved.

Game theory provides a strategic tool to optimise the benefits that come from interaction, and maximise gains among all parties. That's because it provides various perspectives on the choices of the 'players', choices which change according to the circumstances.

Game theory has been hailed as a revolutionary idea which brings psychology, mathematics, philosophy, and an extensive mix of other academic areas together. Game theory applies mathematical analysis to situations in which the results of the choices of the participants depend on the actions of other people. It can be used to solve complex problems. Eight Nobel prizes have been awarded to scholars who have moved the discipline forward.

Game theory involves the study of strategic decision-making in a game setting; more precisely, it's the study of the interaction between rational decision makers and the mathematical models they use to deal with conflicts. 'The prisoner's dilemma', a classic game theory scenario, has long been used to help explain how people can act entirely in their own self-interest, and still create a cooperative community. (The prisoner's dilemma is a situation in which each of two players has two options, and the outcome for each player depends on the choice made by the other player.)



Is game theory a workable decision-making practice in real life, outside of academic circles? The answer is a resounding "yes". Game theory is a useful tool to predict the outcome of an interaction, and it's widely used in political science, psychology, logic, biology, economics, and business. As well as leading to a solution, game theory can also bring a new perspective to a problem.

Businesses use game theory to make strategic decisions in the wider business environment. Business managers can often be faced with a decision matrix like that of the prisoner's dilemma. For instance, managers often struggle with the fundamental question of how to price a product in a highly competitive market. A firm can either match the prices of its competitors, or introduce a lower price. But managers cannot know the pricing strategy of their competitors, so how are they able to make the best choice? This basic scenario already involves strategic interaction among numerous parties. In this case, game theory provides the base for rational analysis and decision making. Careful study of game theory enables managers to discover the strategic choice which leads to an improved situation, or even a win-win situation. In short, game theory gets results.

On November 25, Prof. Sardar Islam, professor of business, economics and finance at Victoria University, Australia, will deliver a public lecture called "Game Theory in Business: Implications for Professional Practices".



In this lecture, Prof. Islam will present real-life economic and business situations by models used in game theory, and will show how these models can help business managers make strategic business decisions in uncertain conditions.

Venue: Conference Hall (C/F), Library Complex, HKSYU
Time: 11.30am to 1pm.
Registration (recommend):
<http://www.hksyu.edu/projects/irpids/>.



Bring Intelligent Minds Together



CONTENTS

- Know more about IDS..... P.2
- Past Speakers..... P.3
- Dialogue with AVP..... P.4-5
- IDS Research Facilities..... P.6-7
- Upcoming Lecture..... P.8



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Inspire, Enlighten, Empower Research in Shue Yan

In the transition from a teaching-focused and research-informed institution to one that is teaching-led research-active institution, Hong Kong Shue Yan University aspires to enrich its research culture and enhance its research capabilities of the academics. With good faith and a genuine commitment to providing quality education, we have embarked on a journey towards excellence in both research and teaching and learning, through taking its first step to constructing an interdisciplinary research platform that brings together world renowned expertise and widely respected academics from a variety of disciplines. This platform embraces the development of interdisciplinary research and endeavors to use research evidence to inform practice.

Know More About IDS

INSTITUTIONAL DEVELOPMENT SCHEME

AT HONG KONG SHUE YAN UNIVERSITY

What is Institutional Development Scheme?

In 2013, the Government launched the Institutional Development Scheme (IDS) which aims to build up the research capacity of the local self-financing degree-awarding institutions in their strategic areas. The funding is strictly deliberated on the basis of performance. A review panel representing the Research Grant Council monitors and assesses the project progress through annual reviews and periodic visits, and evaluates the project implementation in terms relevant to the project effectiveness, budget usage and the level of research outputs.

The Two Projects

To best leverage the academic expertise and existing research resources in Shue Yan, we are recently carrying out two IDS projects alongside the holistic research development of the University.

Constructing An Interdisciplinary Research Platform

This is a three-year project commenced in January 2015. As its name suggests, the project builds and operates a platform that promotes and conducts interdisciplinary research activities. This platform is a 'space for growth and change'. All members in the Shue Yan community including teachers, students and alumni are encouraged to participate in the platform and earn from ample scholarly insights and interesting ideas in research, particularly in the booming interdisciplinary fields such as neuroscience, decision science and strategic behavioral science. We organize a series of knowledge exchange activities that suitable for a diverse range of audience, including public lectures (for the general public to explore the fields), academic seminars (for university students, academics and professional practitioners to get in-depth knowledge of the disciplines), and research workshops (for enhancing the research skills of researchers and post-graduate students).



Establishment of the Centre of Interdisciplinary Research in Evidence-Based Practice

This project will commence in early 2017 and run until the end of 2019. It emphasizes an applied research perspective and the scope of research will be extended to create more interdisciplinarity across practical subjects such as business administration, counselling, journalism and social work. This new IDS project will continue to offer knowledge exchange activities, particularly on the topics about evidence-based practice, for instance: health care, teaching & learning, business management, effective communication, etc. Apart from lectures, seminars and workshops, we will also organize collaborative meetings and a conference to provide a wider exposure to our academics and students to meet with the accomplished researchers and scholars.

Projects Milestones

The University's strategic views in its research development are confidently expressed in the actions set out in these IDS projects. Within the long-term pursuit of our goals, we have a clear schedule to implement the actions. Besides organizing knowledge exchange activities, we have also invested in expanding infrastructure to enhance the research level of the University. We are now establishing an IDS center to amalgamate the intellectual output, advanced equipment and facilities, and administrative input for creating high-quality research and high-impact outcomes. Being located in the new Research Complex, the center will have a computer room and a meeting room for trainings and meetings. Besides, the center has been acquiring specialized laboratory equipment and research software to support contemporary interdisciplinary research. The center will come into operation in 2017, at which time the Shue Yan community can enjoy a wider range of services that facilitate the interdisciplinary research development within the University.

Past Speakers



Dr. Dénes Szűcs

Deputy Director of Centre for Neuroscience in Education of the University of Cambridge
Research strengths: Neuro-imaging and behavioral research on cognitive control and dyscalculia



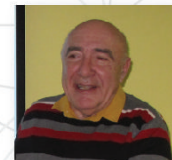
Dr. Tom Schonberg

Assistant Professor, Department of Neurobiology, Tel Aviv University
Research strengths: neuro-computational mechanisms of reinforcement learning and decision making



Prof. Ranga Krishnan

Former Dean at the Duke-NUS Graduate Medical School Singapore
Research strengths: Affective disorders, anxiety disorders, psychopharmacology and geriatric depression



Prof. Leon Petrosyan

Head, Department of Mathematical Game Theory and Statistical Decisions, St. Petersburg State University
Research strengths: Game theory and statistical decisions



Prof. Takeshi Okada

Professor, Graduate School of Education, The University of Tokyo
Research strengths: Cognitive psychological research of creativity and creative collaboration



Prof. Kar-yiu Wong

Professor, Department of Economics, University of Washington
Research strengths: International trade, economic growth and Asian development



Dr. Savio Wong

Associate Head of Department of Special Education and Counselling, EdUHK
Research strengths: brain-body interaction with psychophysiology and neuroscience (i.e. EEG and fMRI) techniques



Dr. Kenneth Yuen

Scientist, Neuroimaging Center, University Medical Center Mainz
Research strengths: Studying affective stimuli using functional magnetic resonance imaging (fMRI), and computational modelling



Dr. Esther Lau

Assistant Professor, Department of Psychological Studies, EdUHK
Research strengths: Clinical neuropsychology, sleep and sleep disorders



Dr. Woo-young Ahn

Director, Computational Clinical Science Laboratory of Ohio State University
Research strengths: Computational modelling and neuro-imaging to understand both normative and abnormal behavior

Connecting Knowledge to life:

From fundamental research to evidence based practice

A dialogue with Professor Catherine Sun, Academic Vice President

R: Reporter S: Prof. Catherine Sun

R: Could you tell us more about the University's initiative on this Institutional Development Scheme?

S: In response to the Government's first call for the Institutional Development Scheme (IDS) funding proposals in 2014, we applied to initiate a strategic plan that fosters the interdisciplinary research development at Shue Yan. We aim to reflect the diverse range of interdisciplinary research interests of our academic staff, and increase the potential for research which could further inform good practice in teaching and learning. Among 13 eligible self-financed institutions, Shue Yan was selected as one of the five successful applicants, and was granted \$6,750,000 for launching its first IDS project that actively promotes research collaborations in inter-disciplines such as neuroscience, decision science and strategic behavioral science. Recently, Shue Yan has been offered another \$6,220,000 to continue the success from the first project, and broaden the research perspective to include not only the fundamental research but also the applied research. In fact, knowledge growth and applicability are the two key indicators in our institutional development framework. We expect there would be substantial progress once this Institutional Development Scheme is embarked.



Prof. Catherine Sun
Academic Vice President
Hong Kong Shue Yan University

R: How does interdisciplinary research benefit the academic development in Shue Yan?

S: Interdisciplinary research is visionary and the latest research direction nowadays. Interdisciplinary collaboration broadens the horizons of research, making it possible to examine common areas of interest from multiple perspectives and to validate findings across disciplines. Based upon this viewpoint, we have identified three areas of interest common to all disciplines in Shue Yan, they are: brain-based teaching and learning, decision-making, and negotiation and persuasion. These areas involve the study of business, education, psychology and law which we are actively engaged in. We believe there are many interesting topics yet to be explored, and one such example is 'creativity'. Creativity is crucial to individual development because it fuels the ability to problem-solve, innovate, and think critically. People who are encouraged to think creatively also exhibit higher self-esteem and motivation. Therefore, we want to adopt neuroscience measures in our education. By understanding how 'creativity' happens in our brains, we would ultimately be able to develop more effective teaching and learning strategies and employ them in our curriculum planning. For the first IDS project, we have formed a project team that consists of academics representing the departments of Business Administration, Counselling & Psychology, and Law & Business. We gathered the effort to build an academic platform where academics from diverse backgrounds can communicate with each other and explore collaboration opportunities. This platform also attracts overseas and local researchers to share their experience in conducting cutting-edge research. We envision that this kind of intellectual stimulation could raise our research capabilities and production, and propel research at the University to a higher level of excellence.

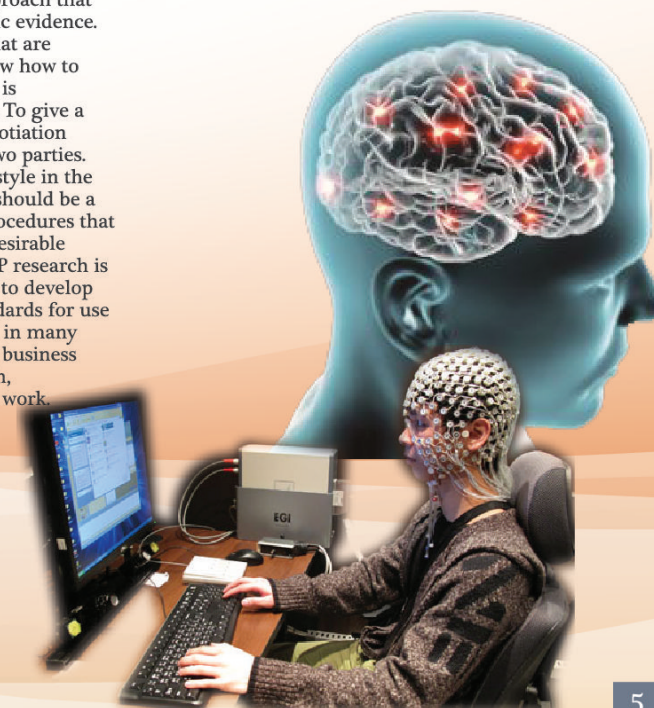
R: Why does the University choose 'evidence-based practice' as the theme of the second IDS project?

S: While the first IDS project has cultivated a more active research culture in fundamental science, the second IDS project aims to further enrich the breadth and depth of interdisciplinary research within the University, and translate its pure findings and knowledge into the teaching of vocationally oriented academic programmes. This integration of fundamental and applied science would welcome more opportunities to act in partnership with the wider community to generate, disseminate and apply knowledge.

Evidence-based practice (EBP) is precisely an integrative and interdisciplinary approach that justify general practice with scientific evidence. Actually there are many practices that are formed through experience. We know how to practice, but do not know whether it is economical, beneficial and efficient. To give a simple example, 'mediation' is a negotiation process to solve a dispute between two parties. Different mediators have their own style in the negotiation process, however, there should be a protocol, a framework, or a set of procedures that a mediator can follow to achieve a desirable result in a cost-effective manner. EBP research is therefore a promising methodology to develop shared and evidence-supported standards for use in practice. EBP is currently adopted in many disciplines and industries, including business management, counselling, education, psychology, public health and social work.

R: How does the IDS center assist in the process of the University strategic research development?

S: The IDS center will take an active role in advocating the evidence-based practice research and to provide broader access to research opportunities via the interdisciplinary research platform. We anticipate that internal links within Shue Yan and external connections between the University and its community partners will be created via the joint development and implementation of evidence-based practice research projects.



IDS CENTER & RESEARCH FACILITIES

The IDS project offers the following research facilities that are available to researchers across disciplines and departments:

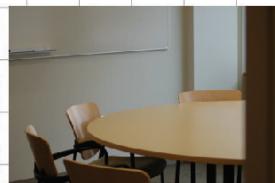
General Facilities

IDS Center*

Being located in the new Research Complex and coming into operation in 2017, the Institutional Development Scheme Center (IDS Center) will provide students, faculty members and researchers with assistance in carrying out interdisciplinary pure research and evidence-based practice research. The Center will organize various knowledge exchange and research activities including public lectures, academic seminars, research workshops that offers research skill trainings and collaboration opportunities to the Shue Yan community.

Computer Laboratory*

The IDS Computer Laboratory will be equipped with 20 networked computers with research and statistical software for doing sophisticated data analysis. The laboratory will also organize research trainings to teach advanced computational research skills.



Research Software

Each computer in the computer laboratory will have installed research software including 1. SPSS - It is used for statistical analysis, predictive modeling, data mining and reporting. In particular, SPSS Amos allows users to build attitudinal and behavioral models that reflect complex relationships. 2. Mathematica - It is a symbolic mathematical computation program used for data analysis, algebraic manipulation, image and geometric computation, and visualization. The two softwares can be used to perform computational modelling related to neuroscience.

IDS Website (<http://www.hksyu.edu/projects/irpids/>)

The project website is a virtual research platform that allows public to view the project information and updates; to download useful research resources; to do event registration; to watch demonstration videos of the IDS research equipment; and to contact the project team.



*will be tentatively opened in 2017.
Pictures for reference only.

Special Research Equipment

DuoMAG XT-100 rTMS System withBrainsight® TMS Neuronavigation system*

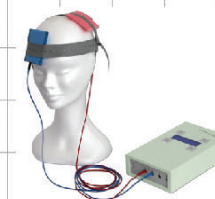
TMS system provides focal magnetic stimulation to the brain of interest, it is capable of using structural scans from MRI to provide highly accurate stimulation to particular areas of the brain. TMS is widely used in motivation- and emotion-related research, making it a useful tool in examining the core concepts of negotiation and persuasion.



NeuroConn DC-stimulator MD (tDCS)

available for booking

It is a non-invasive device applying constant, low transcranial direct current stimulation (tDCS) and transcranial alternating current stimulation (tACS) to the brain of interest via electrodes on the scalp. Depending on duration, used current, current density and frequency the stimulation either inhibits or activates cortical activity. The device is compatible with MRI scans and its versatility makes it suitable for a wide range of research studies, such as research of decision-making and risk-taking behaviour.



FlexComp Infiniti™

available for booking

It is a portable biofeedback system that is used for capturing physiological responses related to emotions and decision-making in scientific research. Various physiological parameters can be selected for measurement including skin conductance, blood volume pulse, respiration rate, etc. It has a wide range of applications in psychology, clinical research, physical therapy, primary care.



For Shue Yan staff and students who are interested in using the equipment, please browse the IDS website for the booking details.

EVENT

CALENDAR ALL ARE WELCOME



Prof. Sardar Islam, Professor of business, Victoria University, Australia. Public lecture "Game Theory in Business: Implications for Professional Practices" 11.30am to 1pm on 25 November 2016 (Friday) Conference Hall (C/F), Library Complex, HKSQU.



Prof. Michelle LeBaron (Left), Professor of Law and Distinguished Scholar in Residence, Peter Wall Institute for Advanced Studies, and Dr. Joel Lee (Right), Associate Professor at the Faculty of Law, the National University of Singapore will deliver public lectures on a topic related to Conflict, Mediation and Neuroscience in 2017.

2017 Speakers