

CELEBRATING  
COMMERCIALISATION  
YEAR 2014

# iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention  
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& design  
exposition 2014

INNOVATEUR  
wannabe!  
2014

27<sup>th</sup> - 30<sup>th</sup>  
APRIL 2014  
DEWAN AGUNG TUANKU CANSELOR (DATC)  
UNIVERSITI TEKNOLOGI MARA  
MALAYSIA

*Bridging  
the valley of death :  
advancing the  
commercialisation  
of research*

RESEARCH BOOK

# iiindex2014

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innovation  
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## FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

Tan Sri Dato' Sri Sallehuddin Mohamed  
Pro-Chancellor, Universiti Teknologi MARA

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## ELECTRONIC MALAYSIAN CRITICAL THINKING TEST

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The current employment landscape and trends seem to point that major employers and stakeholders in the industry are specifically interested in graduates who possess not only technical skills and knowledge, but also critical thinking skills that are more poignant in practical applications within working environments. The current practice of Thinking Test is done by major corporations and bodies like Khazanah, Sime Darby and PNB (Permodalan Nasional Berhad). These corporations make it compulsory for all scholarship candidates and future employees to take a Thinking Test that consists of logical and analytical thinking skills. This practice indicates that other than technical qualifications, they want scholars and employees who could think further, or outside-the-box, as most would refer it. Nevertheless, the natures of the tests that are currently utilized are the traditional paper-and-pencil tests that need to be administered manually. Similarly, the Higher Education Institutions (HEIs) worldwide are also moving towards assessing students' higher order thinking skills as a means to boost their graduates' employability. In view of these demands, a prototype named the "Electronic Malaysian Critical Thinking Test" or e-MCTT was developed. The e-MCTT utilizes suggested Generic Skills and Employability (GSAE) Assessment Model as a framework that policy makers and educators alike could use to assess scholars', students' and future employees' employability as indicated by their thinking skills. Over its development, a tangible assessment tool was formulated and constructed using specified dimensions and constructs. The analyses on the candidates' critical thinking skills then would be formulated automatically by the system, saving valuable time that the human resource department and the HEIs would have to allocate when using the conventional method of assessment. Consequently, the categorization and segregation of the candidates into more manageable cut-out groups could be done automatically as well. The e-MCTT is not only a test that comes in the form of software but it also simplifies the current practices of critical thinking assessment. The e-MCTT could become a nationally-recognized, commercialized and standardized user-friendly screening tool that many major corporations and HEIs could effectively utilize. Product Description: e-MCTT is a test that assesses the test takers' critical thinking skills. The measurements of these skills are divided into 24 sets of problems with 6 seminal dimensions comprising both quantitative and qualitative problems. The focus of the test is to measure the test takers' ability to think, analyse and derive solutions from a given task. The test takers are also expected to show insight into the problem to identify and deal with key information logically. The assimilation and evaluation of viewpoints and arguments in a rapid rate are also expected. What is the Product About: The product is called the "e-MCTT" or "Electronic Malaysian Critical Thinking Test". It is an electronic test to measure the test takers' critical thinking skills. Who are the Customers: a) Private Corporations, that employ fresh graduates and recruit scholars from Higher Education Institutions (HEIs) b) Higher Education Institutions (HEIs) in assessing graduate students' thinking skills as an exit survey. c) Candidates of scholarships and employments as a form of employability indicator. Uniqueness/Speciality: a) Screening tool for employability b) Automated analyses reducing cost and time c) Great accessibility (online)