



Strategic Plan 2016 – 2020

*Faculty of Computer Science &
Information Technology
University of Malaya*

FCSIT VISION & MISSION

VISION

A **globally-influential faculty**, **enriching lives** & **shaping the future** through computing technology.

MISSION

To enrich lives and shape the future for the nation and humanity through education, research and technopreneurship.







Shaping the Future

“Building the Nation and Training the Leaders of Tomorrow”

INDICATOR 1: Employability Rate & Period

TARGET

2016
5 months

2017
3 months

2018
2 months

2019
1 month

2020
0 month

REQUIREMENT: To develop Holistic and Balanced Graduates

OBSTACLE: Curriculum not diverse with industry needs

STRATEGY: To incorporate industry collaboration with undergraduate program

ACTION PLAN	IMPLEMENTATION	PIC
Graduate Skill Attributes (Soft Skills)	Conduct training with MDEC / 3P Sem 1: 1 st Nov – 22 nd Nov (3 weeks) Sem 2: 6 th April – 17 th April (2 weeks)	TDID
Faculty Career Fair	Set-up booth and exhibition Sem 1: 1 st Oct – 5 th Oct	
Invite company to interview students before graduate	Industry Talk & Interview sessions Sem 1: 1 st Oct – 5 th Oct Sem 2: 4 th Apr – 8 th Apr	
Groom students to become Technopreneur (Soft skills)	Technopreneurship course Sem 2: 14 weeks (22 nd Feb – 29 th May) Innovative products project initiative (3 ½ years)	SIG: IPPI

INDICATOR 2: High Quality Training				
TARGET				
2016 Revenue: 100k	2017 Revenue: 150k	2018 Revenue: 200k	2019 Revenue: 300k	2020 Revenue: 300k
REQUIREMENT: To establish expert database or portfolio OBSTACLE: Lack of certified or expert trainers STRATEGY: To establish HUB of Computing Expertise				
ACTION PLAN	IMPLEMENTATION		PIC	
Form Faculty subsidiary company	Establish Faculty subsidiary (Organizational Structure) (2 nd Jan 2016)		TF: BIG	
Increase certified staff in niche areas	Identify niche and in-trend areas (2 months: 2 nd Jan – 28 th Feb 2016) Staff competency planning (1 month: 1 st Mar – 31 Mar 2016)			
Publicize faculty experts	Establish mass media connection (1 week: 3 rd Mar – 9 th Mar 2016) Create influential website (3 months: 1 st Apr- 30 th June 2016)		TF: Rebranding/ Marketing	

INDICATOR 3: No. of Awards (International & National)

TARGET

2016
(Gold Medals)
Int : 10
National: 30

2017
(Gold Medals)
Int: 15
National : 50

2018
(Gold Medals)
Int: 20
National :70

2019
(Gold Medals)
Int: 25
National: 90

2020
(Gold Medals)
Int: 30
National: 100

REQUIREMENT: Need to establish characteristics of innovative products
OBSTACLE: Lack of systematic innovative products management
STRATEGY: To Produce Quality Products for Competition

ACTION PLAN

IMPLEMENTATION

PIC

Extensive Final Year Project
Planning, Management and
Supervision – Innovative Product

Each Semester (FYP coordinator) - Pre-Sem
and End-Sem

SIG: IPPI

Create Industrial Collaborative
Project

Industry Project Collaboration Meeting
(Pre-Semester)

SIG: IPPI

Recognized and Renown
Competition

Annual Competition planning, filtering and
selection – Each year

TF: Competition

INDICATOR 4: Technopreneur Establishment

TARGET

2016 5% of graduate	2017 15% of graduate	2018 20% of graduate Students Start - Up – 10% from IPPI	2019 40% of graduate Students Start - Up – 20% from IPPI	2020 50% of graduate Students Start - Up – 30% from IPPI
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REQUIREMENT: Change paradigm towards technopreneurial culture
OBSTACLE: Lack of fostering technopreneurial culture
STRATEGY: To establish technopreneurship

ACTION PLAN	IMPLEMENTATION	PIC
Groom students to become Technopreneur	Technopreneurship courses/workshops (Semester 2) Innovative products project initiative (2018/19) Collaboration with respective Government Body (eg: MAGIC) (Semester 2, 2016/17)	SIG: IPPI
Students Start -Up	Identify venture capital firm and angel investors (3 rd Year 2018/2019)	TF: BIG

INDICATOR 5: No. of Innovative Products

TARGET

2016
5 products

2017
10 products

2018
26 products

2019
32 products

2020
35 products

REQUIREMENT: Innovative product development phases (identified industries)

OBSTACLE: Product with no/ minimal innovative characteristics

STRATEGY: To synergize industry expertise with faculty talent

ACTION PLAN	IMPLEMENTATION	PIC
1) Acquire real problem from industry and gov.	1) Meeting with director of industry relation division from MOE-second week July 2015 2) Special-Interest-Group (SIG) Innovation hub 3) HUB of computing expertise	SIG: IPPI
2) Encourage proof of concept project	1) Innovative Product Project Initiative – Sem 1 2016/2017 2) MoU/ MoA in research grants/ funding 3) Crowdfunding/ crowdsourcing	
3) Strengthen student soft skill and technical skill	1) Faculty courses –every semester 2) Innovative Product Project Initiative – Sem 1 2016/2017 3) Bootcamp	
4) Product commercialization	1) Patent filing 2) Seek funding and consultancy from government and private sector	TF: IPR / Grant
5) Collaboration with National and International RnD centers (e.g. CERN an IDRC)	1) MoU/ MoA in research grants 2) Develop an innovation hub to support student teams involved in international, national and internal competitions	

INDICATOR 6: No. of Commercialize Product / Services

TARGET

2016
5 products

2017
10 products

2018
26 products

2019
32 products

2020
35 products

REQUIREMENTS: 1) Liaison officers for commercialization 2) Business plan market analysis and industrial matching 3) Industry partnership

OBSTACLES: 1) Limitation of novel research idea 2) Awareness of staff and student interest on technopreneurship 3) Lacking of experts on business plan writing and preparation, database for market analysis and insufficient industrial linkage to research project

STRATEGY: To answer the needs of the future technology

ACTION PLAN	IMPLEMENTATION	PIC
Identification and protection of ideas or invention	1. Identification of niche research areas. 2. Identification of key research “players” at the faculty level for the different departments. 3. Identification if IP worthy research ideas.	TF: IPR
Translation of research prototype into pre-commercialization product	1. Collection of proof of concepts from completed research. 2. Apply for pre-commercialization grant (technofund,innofund,mgs) 3. Product development.	
Licensing or spin-off matured commercial or technology	1. To plan several spinoff companies/licensing based on the different niche research areas identified in the “identification” stage. 2. Nurturing program for technopreneurship.	TF: BIG
Marketing	1. To provide an overview/ summarization of the different products offered by the faculty. 2. Identification of target customers for the products developed. 3. Promotion.	TF: Marketing

INDICATOR 7: First Class Graduands

TARGET

2016 10% first class 20% more than CGPA 3.5	2017 20% first class 40% more than CGPA 3.5	2018 30% first class 60% more than CGPA 3.5	2019 40% first class 80% more than CGPA 3.5	2020 50% first class 90% more than CGPA 3.5
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REQUIREMENT: Produce students with high CGPA

OBSTACLES:

- 1) Lack of motivation and awareness on the importance of first class graduate
- 2) Inconsistency of student performance

STRATEGY: To drive undergraduate excellent

ACTION PLAN	IMPLEMENTATION	PIC
First class graduands culture	1. Motivation and awareness program: Industry talk in Sem 1 and Alumni talk in Sem 2 2. First Class Interest Group (FCiG): setup in December 2016 3. Academia involvement- in seminars for Sem 1 and Sem 2	• Industry-Faculty Coordinator (PM Dr. Chiew). • Alumni-Faculty Coordinator (En. Khalit) • Task force first class (lead by Dr. Siti Hafizah)
Multi-level-mould	1 first class senior mold 1 first class freshmen-performance monitored every semester	TF: FC
Positively skewed distribution of student performance	Tuition classes on identified courses to improve student performance- two tuition classes every semester	TF: FC

INDICATOR 8: No. of Programme Accreditation

TARGET

2016
0 Program

2017
0 Program

2018
1 Undergraduate
Program (BCS)



2019
0 Program

2020
1 Postgraduate
Program (MCS)



REQUIREMENT: Appoint Program Coordinator Committee Members & Support from UM Top Management

OBSTACLE: Major restructuring of the existing curriculum to meet the IAAP requirement & Expensive Application Fees

STRATEGY: To achieved International Accreditation

ACTION PLAN	IMPLEMENTATION	PIC
1. Background Study on IAAP	1. Establish Task Force	TF: IAAP
2. Awareness and preparation for IAAP	1. Create awareness about IAAP to faculty members 2. Establish Committee 3. Documentation	
3. IAAP Application	1. Approach IAAP Agency 2. Visit by IAAP Agency	

INDICATOR 9: No. of Local Postgraduates

TARGET

2016
50

2017
70

2018
90

2019
120

2020
150

REQUIREMENTS: Change employers mindset (support from top-management), flexible postgraduates programs, executive programs specific on computing technology

OBSTACLES:

1) Lack of support from employers for staff to pursue further studies

2) Lack of career path opportunities with PG qualifications

STRATEGY: To established smart partnership with GLC, private sector, government and semi-government

ACTION PLAN

IMPLEMENTATION

PIC

Awareness Programs

1. Series of talks with the industries
2. Marketing activities

TF: Marketing
TDIT, KJ,
PG Coordinators

Partnership with GLC or Government Sectors

Establish connection with Syabas, PDRM, ATM, Maktab Perguruan

TF: Marketing
TDIT, KJ,
PG Coordinators

Executive postgraduate programmes

Develop executive computing technology related programs to cater for higher level executives

TDIT, program coordinators

Bootcamp UG to PG

Bootcamp: Turn local undergraduates to postgraduates students

TDID, TDIT & program coordinators

INDICATOR 10: No. of Specialized Computer Labs

TARGET

2016
3

2017
6

2018
10
(New Building)

2019
15
(New Building)

2020
20
(New Building)

REQUIREMENT: Dedicated labs for teaching and learning purpose inline with the in-trends computing technology

OBSTACLE: Logistics problem

STRATEGY: To establish collaboration with technology provider

ACTION PLAN

IMPLEMENTATION

PIC

Determine the in-trend computing technology

Discussion with computing technology industries (define niche)

Industry-Faculty Coordinator (PM Dr. Chiew).
Puan Syida (ICT Head)

Determine and develop new infrastructure the faculty

To design or develop new building architecture for high computing technology labs

Dean, TDP & JPPHB

Teaching and learning activities

Conduct active trainings, seminars and workshops

TF-BIG (En. Zaidi)

INDICATOR 11: Amount of Diversified Research Funding				
TARGET				
2016 4.0mil	2017 5.0mil	2018 6.0mil	2019 7.0mil	2020 8.0mil
REQUIREMENT: Grow funding for support the teaching, learning and research development OBSTACLE: Lack resources to carry out educational development activities STRATEGY: To increase the numbers of research findings from diverse sources				
ACTION PLAN	IMPLEMENTATION		PIC	
Determine the partnership and source	Discussion with industries (define niche)		Industry-Faculty Coordinator (PM Dr. Chiew). TF-Research Grant (Dr. Por Lip Yee)	
Determine and develop top-drawer research proposal bank	To design or develop innovative research proposals		TDP and Industry-Faculty Coordinator (PM Dr. Chiew). TF-Research Grant (Dr. Por Lip Yee)	
Center of excellence	1. Determine and develop critical niche area for the center of excellence 2. Generate revenue from training, workshop and seminars		TF-BIG (En. Zaidi) TDP	



Enriching Lives

“Enhancing Communities Through Intellect and Technology For A More Fulfilling and Meaningful Life”

INDICATOR 12: No. of Societal Problem Solved Using The Innovative Products

TARGET

2016 No of problem solved 10 (2 products each)	2017 No of problem solved 25 (5 products each)	2018 No of problem solved 50 (10 products each)	2019 No of problem solved 100 (10 products each, Increment of problems)	2020 No of problem solved 150 (15 products each, 10 prob)
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REQUIREMENTS:

- 1) Identified problems from NKRA (crime rate, low income citizen, public transport, bribe issues, infrastructure)
- 2) Establish the connection with people that involve with the community services

OBSTACLE: Lack of information dissemination

STRATEGY: To solve NKRA issues through innovative product

ACTION PLAN	IMPLEMENTATION	PIC
Point of reference	Establish team that contact with the right people	SiG IPPI
Innovative product identification	Identified applications used by targeted citizen	SiG IPPI

INDICATOR 13: No. of Computing Knowledge & Services Transferred				
TARGET				
2016 No of knowledge and services served: 3	2017 No of knowledge and services served: 10	2018 No of knowledge and services served: 20	2019 No of knowledge and services served: 30	2020 No of knowledge and services served: 50
REQUIREMENTS: Getting Participants; Competent trainer; Sufficient funding; Search Engine Optimization; Accessible CoR; Services Identification OBSTACLES: No CoR; Various and too many services; Lack of Collective Skills; Lack of Fund STRATEGY: To create informative society				
ACTION PLAN	IMPLEMENTATION			PIC
Establishment of CoR	Apply specific grants MoA with Industry and GLC (CSR Project) CoR Specification			TDP, TFR, TFBIG,
Staff Development	Identify relevant skills Train collective skills (expertise and soft-skills)			TDP, KPPK, Each Staff
Marketing and Promotion	Meeting potential participants and community Tailor-made knowledge and services In-house and Online Promotion			TDP, TFBIG, TFR, TFJM

INDICATOR 14: No. of Successful Participants To Establish Businesses

TARGET

2016
Successful
participants 5%

2017
Successful
participants 10%

2018
Successful
participants 15%

2019
Successful
participants 30%

2020
Successful
participants 50%

REQUIREMENT: Identification of IT related business to be offered
OBSTACLE: Capabilities of the staff to handle these new tasks
STRATEGY: To create technopreneur society

ACTION PLAN

IMPLEMENTATION

PIC

Setup a spin off
company

1. Getting advice from UPUM for the spin off company that will be established under FSKTM
2. Setup a team that will run the company
3. Identify IT related businesses training
4. Identify the targeted participants

TDP/TF-BIG

Training for the staff

1. Identify IT related certifications for the staff
2. Send the identified staff for the training

TDP/TF-BIG

Assisting the clients

1. Conduct the related training to participants
2. Spin off company to assist in setting up business plan
3. Spin off company to monitor the progress of the business

TDP/Spin off
company

INDICATOR 15: Amount of “Knowledge Transfer” Grant Obtained				
TARGET				
2016 2.0mil 60% with 50k grant	2017 2.4mil 70% with 50k grant	2018 2.8mil 80% with 50k grant	2019 3.1mil 90% with 50k grant	2020 3.5mil All lecturers with 50k grant
REQUIREMENT: Identification of Grant Opportunity OBSTACLES: Shortage of Principal Investigator (PI); Lack of proposal writing skills; Not aware of other funding opportunities STRATEGY: To secure wide spectrum of grants				
ACTION PLAN	IMPLEMENTATION			PIC
Database for PI status and available grants	1. Identify the lecturers with non PI status and current grant amount. 2. Communicate, monitor and assist all lecturers to become PI 3. Identify possible grants			TDP/TF-Grant
Grant proposal writing workshop	Conduct grant writing workshop facilitated by previous grant recipient			TDP/TF-Grant
Community-Industry collaboration	Strategic partnership with UMCIC and community/industry			TDP/TF-Grant & TF-IPR
Mentor-mentee	Pairing the skills			TDP/TF-Grant

INDICATOR 16: New Intelligent / Smart / Conducive Learning Environment				
TARGET				
2016 No of teaching lab 10 Dedicated lab 5	2017 No of teaching lab 12 Dedicated lab 7	2018 No of teaching lab 15 Dedicated lab 9	2019 No of teaching lab 20 Dedicated lab 15	2020 New space upgrade Teaching lab (30) Dedicated lab (25) Space for rent (10)
REQUIREMENT: The need of new building with spaces need (teaching lab, dedicated lab, space for rent, students & staffs ‘stress-free’/‘hangout’ space) OBSTACLE: Crowded space that cannot support the increment of labs and other spaces due to massive students intake and new staffs STRATEGY: To provide conducive intelligent learning environment				
ACTION PLAN	IMPLEMENTATION			PIC
Identify work process in establishing new building	1. Cooperation from JPPHB and Legal unit 2. Ready Drawing and Plan 3. Approval from DBKL and LHDN 4. Fund raising activities			TF BiG
Upgrade the building with conducive facilities	1. Identify quality facilities for building			TF BiG
Identify teaching and dedicated labs	1. Find the market demand with the industry			TF BiG
Market spaces for rent	1. Identify potential companies			TF BiG
Establish students & staffs ‘hangout’ area	1. Identify ample spaces 2. Survey on most wanted facilities needed by student and staffs			TF SH

INDICATOR 17: No. of Applause & Accolade Events				
TARGET				
2016 5 Events	2017 6 Events	2018 7 Events	2019 8 Events	2020 9 Events
REQUIREMENT: Adequate Budget and Refined Selection Procedures OBSTACLE: Funding and Non-Bias Selection of Awards Recipients STRATEGY: To recognize staff/students contribution				
ACTION PLAN	IMPLEMENTATION		PIC	
To recognize staff / students contribution	To recognize staff / students contribution		To recognize staff / students contribution	
To recognize staff / students contribution	To recognize staff / students contribution		To recognize staff / students contribution	



Globally-Influential Faculty

“Academia with strength and dominance to create a positive impact that brings world recognition in teaching, research, knowledge transfer and international outlook.”

INDICATOR 18: Global League Ranking By Subject

TARGET

2016
51-100 QS

2017
41-50 QS

2018
31-40 QS

2019
21-30 QS

2020
Top 20 QS

REQUIREMENTS:

- 1) High quality postgraduates; High quality research topics; High amount research grants
- 2) Productivity in publishing ISI-indexed journal
- 3) Publications in top tier journals; High citations in top tier journal publications
- 4) World class building & infrastructure; high-tech computing facilities & Learning Spaces

OBSTACLES:

- 1) Limited funding to recruit postgraduates; Lack of marketing & promotion activities & materials
- 2) Less citable publications; Citation behaviour & practices
- 3) Competition from other Universities for global ranking

STRATEGY:

To inculcate research world class culture

ACTION PLAN	IMPLEMENTATION	PIC
Full research / Doctoral student numbers	Increase number of doctoral students* (refer to indicator 4); Expanded research landscape	TDIT
Acquisition of international research grants & awards	Establish a research grant advisory council to advise long term research grants opportunities and trends; Application of HIR2, GGC	TFG; TDP
Impact in scholarly research output	Establish a research advisory council to advise long term research impact opportunities and trends; Strategic collaboration with influential researchers; Collaborative authorship with other countries; Strategic citation practices	TDP

INDICATOR 19: No. of Citations Per Faculty

TARGET

2016 50 CpF for 25% of FSKTM academics	2017 50 CpF for 50% of FSKTM academics	2018 50 CpF for 75% of FSKTM academics	2019 64 CpF for 75% of FSKTM academics	2020 64 CpF for 100% of FSKTM academics
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REQUIREMENTS:

- 1) High quality postgraduates; High quality research topics; Research grants
- 2) Productivity in publishing ISI-indexed journal
- 3) Publications in top tier journals

OBSTACLES: Less citable publications; Citation behaviour & practices

STRATEGY: To increase visibility of the faculty research output

ACTION PLAN	IMPLEMENTATION	PIC
Impact in scholarly research output	Strategic collaboration with influential researchers; Annual Research Open House to engage the scholarly community to recognize faculty research accomplishment; Strategic citation practices	TDIT TDP
Actively publishing in ISI-indexed journal	Organize academic writing workshops for staff and students; Writing Bootcamp	TDP

INDICATOR 20: No. of Engagements In Global Grand Challenges Projects

TARGET

2016

1 GC

2017

2 GC

2018

2 GC

2019

2 GC

2020

3 GC

REQUIREMENTS:

1) Principal investigators with good research track-record

2) Existing collaboration with academic icons;

OBSTACLE: Hesitation and lack of commitment to undergo the GC application process

STRATEGY: To establish the Faculty as hotbed of innovations in emerging areas of computer-based research

ACTION PLAN	IMPLEMENTATION	PIC
Establish a Technology roadmap of new projects under computing grand challenges	Devise a process to make the roadmap a living document, Project identification; Mapping of faculty research strength; Research proposals;	TDP
Aggressive pursue of new GGC opportunities; Acquisition of International research grants & awards	1. Nurture partnership formation; Organize GC meetings; Create a support system for GGC activities 2. Strategic alliance with prestigious funder 3. Recruitment of Principal Investigators	TFG / TDP
Human capital development	Staff recruitment for Postdoc and Co-PI (to be future PI)	
Publicize research and innovation impact	Linkage with media; Publication; Community engagement; Societal Impact Pilot study	

INDICATOR 21: No. of International Postgraduates Intake

TARGET

2016 100	2017 120	2018 140	2019 170	2020 200
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REQUIREMENTS:

- 1) Finance support - Money for Visits
- 2) Staff Commitment - to carry out visits;
- 3) New building & infrastructure, high-tech computing facilities

OBSTACLES:

- 1) Time constraint; Red-tape – Visa application; Stringent Graduation Requirements; Competition from other Universities
- 2) Postgraduates from rich country are less interested to study our program; Cost of city-living

STRATEGY: To establish the faculty as a destination of choice for computing studies for Malaysian and foreigner

ACTION PLAN	IMPLEMENTATION	PIC
To increase recruitment of international postgraduates; Intensifying the Promotion of International PG Students	Join UM marketing promotion drive	TFPR/TDIT
	Organize official visit to universities with MoA/MoU for recruitment	TDP/TDIT
	Carry out Faculty own promotional exercises; Create a web portal for potential graduate students to convey exciting research opportunities at faculty	TFPR/TDIT
	Establish a ‘Student gets student’ program	TDIT
	Summer research experiences for potential students (Bootcamp)	TDIT
Ask cooperation from Alumni	Recruit faculty ambassadors among existing students	TDP

INDICATOR 22: Programme Accreditation

TARGET

2016

2017

2018
1 Program

2019

2020

REQUIREMENTS: Quality assurance system in place; financial support; a dedicated document manager; staff commitment; new building & infrastructure; high-tech computing facilities

OBSTACLES: Financial support; staff commitment

STRATEGY: To obtain international recognition of our academic curriculum

ACTION PLAN

IMPLEMENTATION

PIC

ABET Requirements and Evaluation Criteria

Study the requirements and the criteria
June 2015

IAAP

Create awareness about ABET CAC to faculty members

Lunch Talk:
September 2015

IAAP

Restructuring curriculum to map the requirement

Recommend possible framework of our curriculum restructuring to the curriculum review committee of the Faculty
October 2015

IAAP

INDICATOR 23: No. of Students In Global Computing Workforce

TARGET

2016
10% of
graduates

2017
20%

2018
30%

2019
40%

2020
50%

REQUIREMENT: International accreditation of academic program
OBSTACLES: Graduates attitudes, computing and communication skills
STRATEGY: To be one of the provider for global computing workforce

ACTION PLAN

IMPLEMENTATION

PIC

1. International accreditation of academic program

Obtain ABET CAC
August 2018

IAAP

2. Students engagement with international companies and universities
 3. Internship with multinational company
 4. Joint product and services development with multinational company

1. Increase number of students participating in academic exchange program with international companies and universities
 2. Increase number of students participating in internship program with international companies and universities

TDID,
Industrial
Training
Coordinator