

IN PERSON WITH...
YBHG. DATO' SRI DR.
SHARIFAH ZARAH
SYED AHMAD

P4

VIS-À-VIS WITH
ALUN RHYDDERCH
PUBLIC SERVICE -
TODAY AND TOMORROW

P7

CONNECTING THE DOTS
IN THE PUBLIC SERVICE

P23

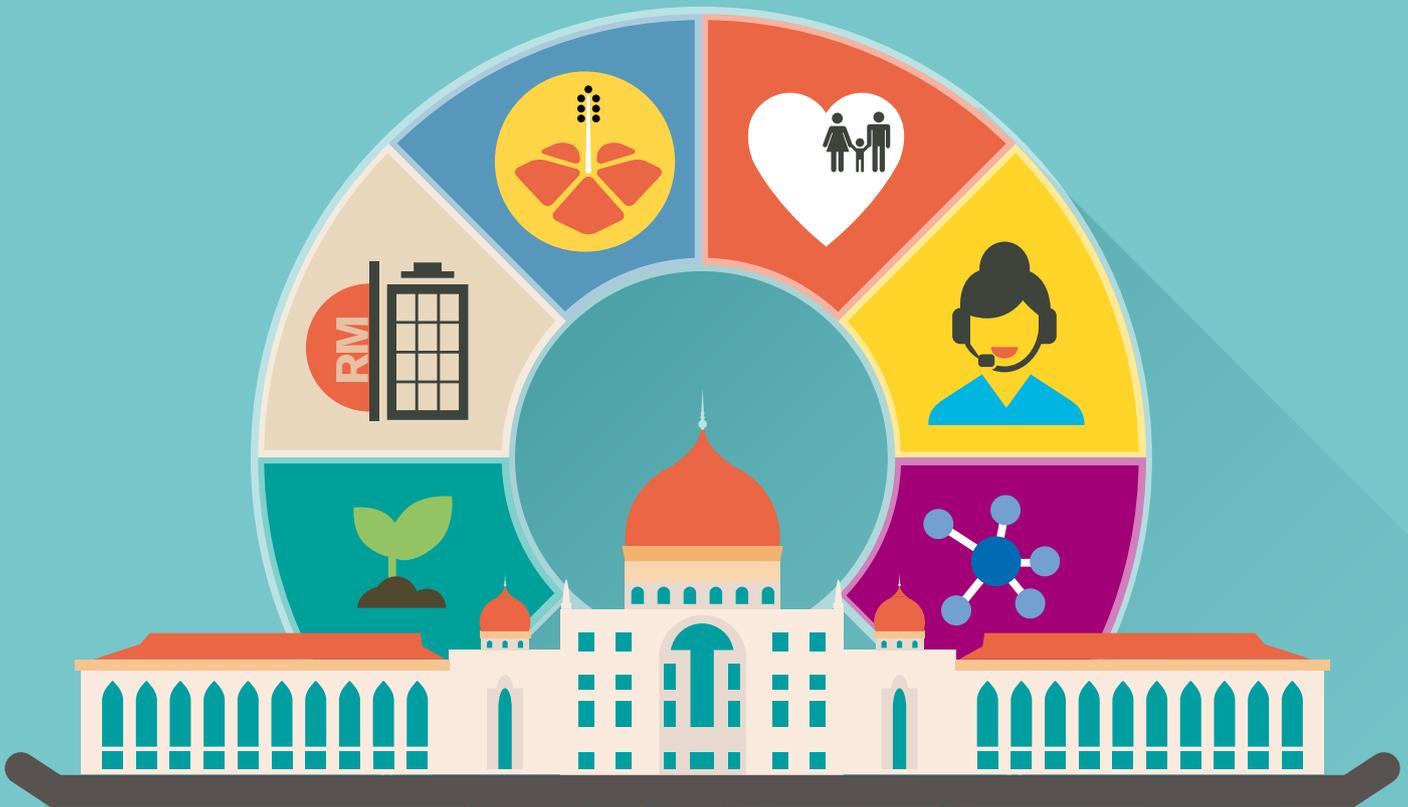
MIGHT
Malaysian Industry-Government Group
for High Technology

PUBLISHED BY
myForesight

myForesight[®]

MALAYSIA'S NATIONAL FORESIGHT MAGAZINE

04/2014



MALAYSIAN PUBLIC SERVICE 2030:

LOOKING INTO THE CHARACTERISTIC OF CHANGES FOR BETTER SERVICE

LIMA '15

the langkawi international maritime
& aerospace exhibition, langkawi, malaysia
17-21 March 2015

where business is always a pleasure

As one of Asia's most important business platforms, our focus is to place **you** at the heart of the vibrant Asian marketplace. With 333 defence and civil delegations, 70 nations, 132 aircrafts and ships on display, more companies are finding the reason to participate in LIMA very compelling. Nearly 500 in total and growing.

And we assure you it has nothing to do with Langkawi's 99 tropical islands and its pristine beaches...☺

LIMA '15. Delivering Asian Markets.



maritime
&
aerospace
defence



commercial
aviation



shipbuilding
&
shiprepair



MRO



airport
equipment



helicopter



unmanned
systems

www.lima.com.my

ORGANIZED BY:



SUPPORTED BY:



OFFICIAL TELECOMMUNICATIONS
PROVIDER:



OFFICIAL BANK:



OFFICIAL MEDIA:



EDITORIAL BOARD

ADVISOR

Datuk Dr. Mohd Yusoff Sulaiman

EDITOR-IN-CHIEF

Rushdi Abdul Rahim

WRITERS

Tan Sri Dr. Sulaiman Mahbob
 Dato' Sri Dr. Sharifah
 Zarah Syed Ahmad
 Datuk Dr. Abdullah Abdul Rahman
 Alun Rhydderch
 Dr Anesee Ibrahim
 Dr Maziah Che Yusoff
 Prof. Dr. Nik Ahmad
 Kamal Nik Mahmud
 Liew Seng Choy
 Mohamad Azreen Firdaus Abd Aziz
 Mohd Qaharuddin Abdullah
 Nadia Sullivan
 Siti Nur Fatimah Noodin

CONTRIBUTORS

Amallia Ahmad Zaini
 Ani Suzila Anas
 Natrah Mohd Emran

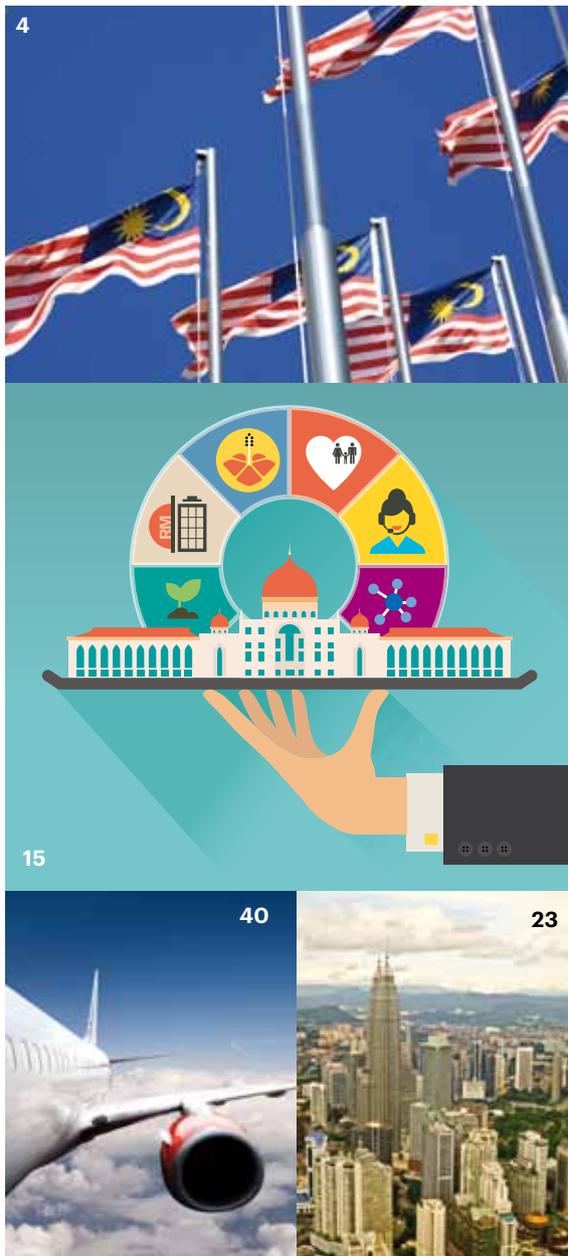
PUBLISHED BY

Malaysian Industry-
 Government Group
 for High Technology
 Prime Minister's Department
 3517, Jalan Teknokrat 5
 63000 Cyberjaya
 Selangor Darul Ehsan
 www.might.org.my

FOR INQUIRIES

myForesight®

Phone : +603 8315 7888
 Fax : +603 8312 0300
 E-mail : foresight@might.org.my
 Website : www.myforesight.my



- 2** INITIAL THOUGHTS
- 4** IN PERSON WITH...
YBHG. DATO' SRI DR. SHARIFAH
ZARAH SYED AHMAD
- 7** VIS -À-VIS WITH ALUN RHYDDERCH
PUBLIC SERVICE -TODAY AND
TOMORROW
- 10** CIVIL SERVICE:LEADERSHIP,
TRANSFORMATION AND
SUCCESSION PLAN
- 15** TRANSFORMING MALAYSIAN
PUBLIC SERVICE:
CHARACTERISTIC OF CHANGES
FOR BETTER SERVICE
- 21** LEADING FOR INNOVATION:
CREATING THE PUBLIC SECTOR OF
THE FUTURE
- 23** CONNECTING THE DOTS IN THE
PUBLIC SERVICE
- 26** WHAT THEY SAY
- 28** THE STUDY OF THE PERCEPTION
TOWARDS THE IMPLEMENTATION
OF JPA TRANSFORMATION
- 32** GOING GREEN: CONVENTIONAL
PRACTICE MADE POSSIBLE TODAY
- 35** ENSURING A SECURITY SUPPLY OF
NATURAL GAS FOR THE NATIONAL
POWER GENERATION: PIPELINE
MAINTENANCE & OPERATION
- 40** SUSTAINING AEROSPACE
INDUSTRY DEVELOPMENT
- 45** myForesight® BOOKCLUB
- 46** TECHNOLOGY TIMELINE 2050
- 49** HAPPENINGS

DISCLAIMER

Any article included in this publication and/or opinions expressed therein do not necessarily reflect the views of the myForesight® but remain solely those of the author(s).

The Publisher is not to be held responsible for any copyright violation of articles, which have been provided by contributing writers.

myForesight® allows you to republish/ quote any information from this publication as long as you acknowledge the source.

myForesight® is a pioneering national level initiative dedicated to the prospecting of technology for business through the field of Foresight. It provides a common Malaysian based platform for the Government, Industry and Academia to share experiences, insights and expertise on the strategic futures issues, both at the local and global levels.

Its key components to its mission are intelligence, research, competency and community. myForesight® raison d'être is to accomplish the following:

1. Shaping Malaysia's future possibilities;
2. Promoting and mainstreaming of foresighting in national, sectoral and corporate planning;
3. Identification of key technologies to support sectoral development;
4. Identification of key and potential industries from technology perspective.

editor's note

Initial Thoughts



by **RUSHDI ABDUL RAHIM**
rushdi@might.org.my

Dear Readers.

It brings me great satisfaction to bring you another edition of our myForesight® magazine and I believe it is not too late to wish you Happy New Year. I sincerely hope that in ushering the New Year, it will be much better than the one we faced in 2014.

We here in myForesight® start our work with renewed vigor in trying to make the best of the year ahead. This also applies for me personally as well as my children; the eldest into his first year in secondary school while the youngest is into his second year in primary school. Even early in the year, their homework is already piling up. Anyway, as I sat down watching my children doing their homework, I asked my youngest son what is his ambition? He rambles about the jobs and occupations that he is familiar of and what interests him. As I listened to him, I wonder what would be the perfect future of work? What are the drivers, issues and challenges?

The changing nature of work has enormous implications in how we structure organizations, manage people, and design workplaces. Some organizations are already leveraging the new ways of working; others are struggling to understand what the future means. In some developed countries this has included the move of empowering people by fostering the contributory capacities that it can bring to the improvement of an individual, family, organization and society.

Globalization, technology, current geopolitical environment and demographic challenges have become more volatile. Everything is now more dynamic; from views to values and attitudes, becoming more diverse particularly those of the younger generation. Managing work and talent in today's world has therefore become more challenging? These were the main factors considered when The Malaysian Public Service (JPA) and MIGHT through myForesight® embarked on the initiative "the Future of Malaysian Public Service". JPA

as the administrative arm of the government has a crucial role to play in facilitating the nation's journey toward 2020 and beyond.

We are now in an era in which we have to accommodate and adapt to the changing needs of the citizens, and these needs are coming in waves fuelled by a more educated, aware and politically and technologically savvy population. As the population becomes more technologically savvy, so must the public service. Different modes of service delivery, and in particular those that leverage on information and communication technology (ICT), are continually being thought of, created and developed to fulfil the differing needs of the population. The Public Service will not be immune to trends that are influencing the workplace landscape.*

*Trends Influencing the Workplace

- *More workplace flexibility*
- *Greater premium on knowledge workers*
- *Simplifying workload and processes enabling greater focus on ideas and innovation*
- *Wellness & Health program becomes a prominent feature*
- *Workplace no longer bound by physical & geographical locations*

This entire issue will be addressing the aspiration and hope for the future of our Public Service. This includes special interviews and insights with YBhg Dato' Sri Dr. Sharifah Zarah Syed Ahmad, previously the Deputy Director General of Public Service (Development) before being appointed as the Secretary General of Communication and Multimedia Ministry and Alun Rhydderch from the School of International Futures (SOIF).

Read our preliminary findings on the drivers on the Future of Malaysian Public Service. The outcome of the study will emphasize on the need to develop a medium to long term strategic outlook and policy directions for the Malaysian public sector based on a clear human resources management framework. Using foresight methodology, the report will enable the government to look into the future, think strategically about the right mix of people and skills that will be required to respond to the changing national development needs and strategies with the necessary policy directives.

After more than 4 years, I do hope you still find the magazine of interest and beneficial. We welcome inputs and opinions.



“

We are now in an era in which we have to accommodate and adapt to the changing needs of the citizens, and these needs are coming in waves fuelled by a more educated, aware and politically and technologically savvy population. ”

leader's insights

IN PERSON WITH...

YBhg. Dato' Sri Dr. Sharifah Zarah Syed Ahmad



Dato' Sri Dr. Sharifah Zarah Syed Ahmad, is currently the Secretary-general of the Communications and Multimedia Ministry, effective from Jan 1, 2015. This interview was held during her post as the Deputy Director General of Public Service (Development) since appointed on March 2013. Her vast experience in the public service including for Malaysia's Ministry of Defence, Ministry of Education, National Unity and Social Development, Ministry of Foreign Affairs and the Ministry of Women, Family and Community Development.

Public Service: Then & Now

Any government would endeavour to have a public service that supports national aspirations and fulfills the needs and expectations of its citizens. That would be the minimum requirement for an ideal public service. However, I believe an ideal public service is dependent on the needs of the nation at any particular time. We have seen the changing public service of Malaysia as we progressed through the various stages of development.

The first stage was after independence in 1957. At that point in time, we focused on building a new nation. The public service then was led by an elite group of bureaucrats with a basically bureaucratic administration. At the top of the organisation is the head that leads and

commands the entire bureaucracy. This old public administration is 'by the desks' with top-down authority. Often portrayed as the ROWING model, the administrators specialise in defined areas of the traditional public administration. Each task is broken into smaller tasks, and different people work on different tasks. Silos and turf wars are inevitable. Yet, the rowing model, despite being seen as inefficient and bureaucratic, helps to ensure that administrators are under control by their bureaucrats within the well-defined administrative hierarchy.

The second stage in the public service scenario saw the introduction of the New Public Management (NPM) characterised by entrepreneurial practices that focused on outputs and outcomes, known as the STEERING model. In Malaysia, it was a period that saw the advent of Malaysia Incorporated that pioneered the smart partnership between the public and private sectors. The synergy from this private-public partnership reinforces their respective roles and is mutually supportive of each other. Until today, the success story of the smart partnership is remembered by many including our global partners. It is a strategy that has sustained our competitive, robust and resilient economy.



After independence in 1957, we focused on building a new nation.

Thirdly, the New Public Service (NPS) was introduced to meet the challenges of an increasingly knowledgeable, demanding and tech-savvy citizenry. Propounded by Robert B. Denhardt and Janet Denhardt (2002), the NPS, known as the SERVING model, engages and involves the citizens in co-creating and co-designing policies and programmes. The NPS is based on democratic citizenship and advocates that the primary role of public servants is to assist citizens to articulate and meet their needs rather than to control or steer them.

Collaborations are no longer bilateral but with multiple stakeholders (multiple helix) from the private sector, civil society, academia, non-governmental agencies and citizens at large. This multi-relationship seeks to ensure that citizens are represented and contribute towards more inclusive policy decision making. Deliberative democracy rests on the core notion of citizens and their representatives deliberating public issues. Deliberation is central to decision making in the public service. The “wisdom of the crowd” will certainly help governments make better informed decisions and enhance service delivery.

Public servants should be well equipped with the latest knowledge and relevant skills to enable them to helm and drive the country’s development agenda, and serve the nation at their absolute best.

The internal challenges surrounding the public service such as brain drain, bureaucratic red tape, silos, over-centralised, slow and less responsive service delivery should be swiftly addressed. In the digital era, citizen-centric service delivery should not be cluttered by hierarchical complexities of organisational structure. Instead, the structures ought to be seamless with services that are easy to access. We should create an eco-system that is conducive for innovation to flourish in the public sector.

As advisors, planners and implementers to the Government, the transformative power and potential of the public servants in all disciplines must be unleashed so that they can deliver. We must create a

high performing, dynamic, citizen-centric public service imbued with good values and integrity. Public servants should be well equipped with the latest knowledge and relevant skills to enable them to helm and drive the country’s development agenda, and serve the nation at their absolute best.

Role of Foresight in Transforming the Public Service

Nothing is constant but change. The changes around the world such as globalisation, increasing connectivity, talent war, and rapid advancements in science, technology and innovation as well as the global financial crisis require game-changing solutions. The changing and uncertain nature of the world is why we need foresight. For the Public Service to thrive amid all turbulence and uncertainty, it should be able to think ahead. We should work towards broad consensus on a defined range of possible future scenarios. I see foresight as an increasingly critical competency for the Public Service given the wicked and complex issues facing us today. The typical linear approach towards problem solving no longer suffices. Foresighting allows us to develop various scenarios of possible futures which address all possibilities and

plausibilities, leaving nothing to chance. Public servants should be trained to undertake foresight, employing the best methodology and tailoring it to the needs of the stakeholders. They should also channel foresight information and build networking with related organisations.

The private sector has been active in the adoption of foresight thinking and scenario building. A classic example of scenario building was conducted by Shell which allowed them to foresee and prepare for the oil shock of the 1970s. It enabled them to recover quicker than their competitors. Kodak Eastman would probably have survived had they leveraged on foresight to identify digital technology as the future of the photographic film industry.

Experience shows that back-casting and trend analysis form the basis for much of our planning. While these tools are still important, it is time to start building future scenarios for other possible eventualities in a more informed and strategic manner. It is critical that we begin to explore foresight methodologies to envision the way forward as we come to the tail end of Vision 2020. To begin the journey, I would like to propose “A Public Sector Futures Forum” to be jointly organised by the Public Service Department (PSD) and the Malaysian Foresight Institute (myForesight®) under MIGHT.

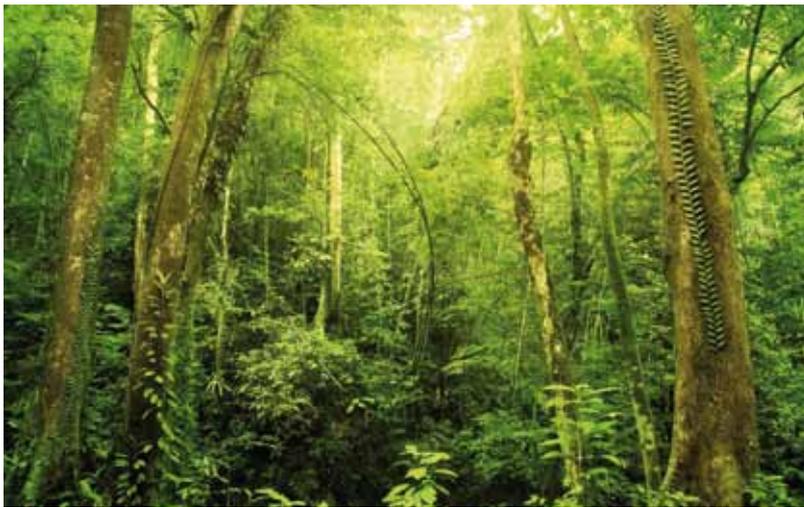
The Key Ingredients towards a Successful Transformation

The road to transformation is a rocky and perilous one. Any transformation would obviously require a well laid out plan that outlines what is best for any organisation in a structured and sanitised environment. While a plan of action is clearly needed, there is an alternative view that the ecosystem within an organisation should be allowed to evolve and grow much like the idea mooted by Hwang and Horowitz in the book “The Rainforest”. Just like the heterogeneous nature of the rainforest ecosystem where species have their unique roles in complementing each other, human systems within the organisational ecosystem should be nurtured to allow them to fulfill their full potential. To build rainforests, we must transform organisational culture. The key ingredients of innovation namely talent, ideas and capital should be allowed to flow unimpeded.

This is a daunting task, especially when we consider the sheer size of the Public Service. But it is a challenge we must rise to. We have begun this process at the PSD by developing the Public Service Transformation Framework which encompasses five key areas – people, structure, values, inclusiveness and service delivery – as the fundamental components of the public service ecosystem.

Personally, I believe that there are many elements involved in ensuring that transformation is successful. Critical among them is the need to ensure that everybody’s interest is captured. With our citizens today being more affluent, informed and vocal, the public service needs to communicate and engage them in

leader's insights



Just like the heterogeneous nature of the rainforest ecosystem, human systems within the organisational ecosystem should be nurtured to allow them to fulfill their full potential.

decision making. We need to involve them in the process of governance. In other words, co-creating and co-designing policies and programmes with citizens within the public service. The public service culture also needs to change. We need to listen more to what the citizens, stakeholders and internal customers are saying and demanding. We need public servants who probe and provoke others to obtain their views and inputs in ensuring that transformation efforts are being supported and internalised.

Young Leaders As the Change Agents

In Malaysia, currently over 70% of public servants are from the X and Y generations. Young people should be at the forefront of global change and innovation. They should be empowered to be the change agents. Developing leadership among the young is important for us. Towards this end, we have introduced new programmes including a fast track system where 20% of leadership positions will be filled by competent and capable young officers. We have strengthened our training programmes to provide our younger officers with the skills, exposure and knowledge relevant to the present and future leaders. Opportunities are given for them to further their studies and obtain higher qualifications at Masters / Doctoral levels. They are now offered to participate in cross fertilisation programmes with private companies, GLCs and local authorities to enhance their knowledge and gain exposure critical to their career development. All of this allows them to witness and experience

first-hand working situations outside their normal scope of work and bring fresh insights to their world view.

The future leaders in the public service will be more involved, engaged and versatile. This is in keeping with the Chief Secretary to the Government's aspiration of humanising the public service where public servants are themselves customers in need of quality services provided by public sector organisations. The appreciation of the value of this approach will lead to speedier, simpler and responsive services, thus

contributing towards a positive image of the public service. Future leaders will have to adopt the servant leadership style that emphasises on "societal well-being" where leaders share power, put the needs of others first, and help people develop their full potential.

The Future of Public Service

Obviously, the global public service of the future is one that is lean, agile, tech-enabled, digital, proactive and responsive. The PwC, in its Future of Government study, identified

the challenge facing the public service worldwide in adjusting to the new reality of doing more for less while focusing on societal outcomes. In doing so, PwC has also discerned several key trends that impact on the role of the public service. These include the shift from the citizen being controlled to the citizen being in control; from large, cumbersome and silo entities to small, flexible, purpose driven and networked entities; from measurement by outputs to outcomes; and from forced cooperation to mutual collaboration based on trust.

In future, people will be more empowered and actively involved with the business of governance. Communities will self-regulate and thereby nullify the need for active intervention by the public service. Delivery of services will be governed by global standards and norms. The advances in ICT will make the world smaller and connected. Services will be provided in real time, 24/7 as technology never sleeps and does not need holidays.

I believe that should ranking continue to be practised in the future; the focus will shift to less tangible dimensions. As the world becomes more integrated economically and socially, new measurements of achievements will focus on the intangibles such as happiness and well-being rather than competitiveness and efficiency. This does not in any way diminish the role of the public service but instead raises the bar in meeting societal needs in this new age of scarce resources.

Future leaders will have to adopt the servant leadership style that emphasises on "societal well-being" where leaders share power, put the needs of others first, and help people develop their full potential.

The public service should focus on inclusive growth and respond by doing more from less for more (MLM) to cater for the excluded segments of the society. The inaugural Malaysia Human Development Report, *'Redesigning an Inclusive Future'* published by UNDP asserts that Malaysia, in its journey to become a high income and developed nation by 2020, should not only concentrate on growth and high income but also target to uplift the quality of life of the excluded groups, notably the Bottom 40% of the Population (BoP).

VIS-À-VIS WITH ALUN RHYDDERCH

Public Service – Today And Tomorrow



Alun Rhydderch is co-founder of the 'School of International Futures' (SOIF). Prior to this he has worked for the UK Foresight Horizon Scanning Centre since 2005. He managed projects for the Centre including the International Futures Project (2020 scenarios), World Trade: Possible Futures, and Technology and Innovation Futures, and designed and facilitated scenario workshops to inform the UK National Security Strategy. He led development of the Sigma Scan – 250 future issues and trends relevant to UK public policy (www.sigmascan.org). He is a regular speaker on horizon scanning and scenario planning, and has taught a European Commission course on the subject. He has published guidance on the use of scenario planning in government.

Public service is often used as a way to describe – and justify – the activities of the state administration. In the past this has involved the state determining what the public needs and trying to provide them. In the 21st century, the situation is different. First, governments recognise that they are dealing with the needs of many different groups of citizens; second, the state is

not the only, and sometimes not the best provider of services that meet those needs. This means that the ideal public service needs to:

- (a) Be more aware of what citizens really need and want, and
- (b) Define its goal as doing what it can to ensure that these needs and wishes are met, whether by its own resources and efforts or by those of other service providers.

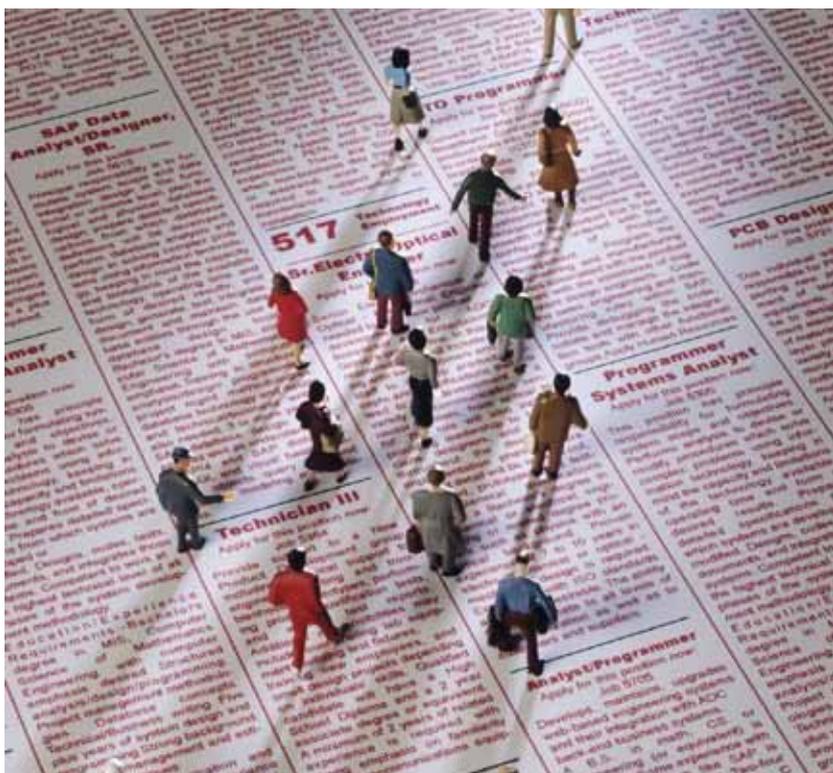
Some public services are likely to continue to be best provided directly by the state. For example, security - at a national level and also at a community level - welfare, and education. The private and not-for-profit sectors may have a role in these, but the state will probably remain the major player. In many other areas though, from



The ideal public service needs to be more aware of what citizens really need and want.

Public servants should be well equipped with the latest knowledge and relevant skills to enable them to helm and drive the country's development agenda, and serve the nation at their absolute best.

leader's insights



The best opportunity to transform a public service is at the recruitment stage.

Existing civil servants should be part of an exercise to imagine the public service of the future, taking into account factors such as demographic change, public expectations, inequality, global competitiveness, technology, etc.

infrastructure to R&D, a successful public service in this century will act as a convener of private partners and coordinator of both state and non-state resources. And once the basic needs of citizens have been met – not to underrate this challenge – new expectations on the part of society, and the means of satisfying these, will tend to lie outside the public administration's traditional radius of action, meaning that over time the share of GDP accounted for by state spending is likely to decrease.

This raises the question: Should civil servants continue to be recruited as a cadre of elite administrators? The obvious answer is yes, they have such an influence on the development of the country that they

need to be the best and brightest. There is good empirical evidence supporting this case, Singapore being an example. And during a country's development phase, it is hard to refute the argument that your best planners, finance people, and even industrialists should be part of the administration.

Looking to the future though, the ideal public service might have quite a different composition, particularly in a technology-enabled consumer society. You might want the brightest people out in the private sector generating economic prosperity. And you may want public servants playing a more modest role supporting them while ensuring that resources and wealth are distributed fairly across the population. In other words, Public Service need to change ... to transform.

Transformation: Not an Overnight Process

My experience tells me that the best opportunity to transform a public service is at the recruitment stage. This means that you should not expect an 'overnight' transformation. Great care should be taken over who you bring into public service, not just in the obvious areas of skills, analytical capabilities, etc., but in terms of flexibility, innovation, ability to inspire others, values. You need to recruit people for the public service of 2030, not just today's.

If you want or need to transform an existing service more rapidly, you should work with existing public servants to define what the role of the new service should be, and what it should look like, agreeing together what steps need to be taken in year one, by year five, by year ten, etc., in order to get there. People need to understand the longer-term goal, not just be pushed into a year one transformation plan that they don't understand the purpose of.

Transformation does not come naturally to a public service. The sector has a tendency to be very conservative, particularly in developed countries, where the model has often not changed fundamentally since the 19th century. I think the best practices in transformation are still in the future! This is where foresight comes in.

The Role of Foresight

Foresight can, and should have an important role in such a programme. Foresight will probably already have been

used as part of the development planning process to provide a vision or direction for the country over 10-20 years - i.e. not beyond the five-year duration of the plan. This foresight material, and other studies, should be distributed as input material for the civil service transformation process.

As discussed earlier, existing civil servants should then be part of an exercise to imagine the public service of the future, taking into account factors such as demographic change, public expectations, inequality, global competitiveness, technology, etc. This exercise could, for example, set out different scenarios for Malaysia in 2030, and identify which kind of public service would be most effective across the scenarios.

Of course, other actors should be involved in this exercise. Experts in various technical fields, representatives of the private sector and civil society should all contribute their views.

Once the ideal shape of the civil service of the future has been agreed, the process of transformation towards this new service needs to be carefully thought through, with targets and regular milestones. But changes should not be implemented too rapidly; otherwise there is a risk of rejection by the service, along with other unintended consequences.

The Key Ingredients

There is no single recipe for successful transformation of the public service. In addition to a number of global factors, such as technology, economic growth, security, competitiveness, there are factors that are geographically determined or country-specific such as size, demography, stage of development, history and culture, and political ties. That is why is each country should undertake a process that recognises the global, regional and country-specific factors affecting its future.

Foresight is increasingly recognised as an essential tool for marshalling, analysing and making sense of these different shaping factors. For example, as part of its recently created Global Centre for Public Service Excellence, UNDP is running a series of projects with developing country partners to promote the use of foresight.

Applying a one-size-fits-all approach to transformation of the public sector has been tried before with New Public Management;

Once the ideal shape of the civil service of the future has been agreed, the process of transformation towards this new service needs to be carefully thought through, with targets and regular milestones.

the lessons from that experience need to be learnt. Foresight does not come with recipes. Instead, it offers a flexible process, drawing on the knowledge, intelligence and insight of people with a good understanding of the challenges and opportunities facing a particular country, and asks them to help design a positive future for that country, and the way to get there.

The New Generation of Leaders

It is important for young people to be represented in the political process, so the presence of young people in power is a visible step towards that. But even more important is that older politicians listen to young people and make an effort to understand what they want, what is important to them.

There will always be a difference in the aspirations of younger and older people. This is accentuated in the West at the moment by stark differences in living standards after the financial crisis, and by powerful new technologies creating new affiliations and expectations. The generational difference may be even greater in rapidly developing countries such as Malaysia. The tendency of older people is to resist change, to hang on to what they've got. The tendency of younger people is to embrace change, to want more things and new things.

To determine how public policy and public service should respond to these different expectations is no easy task. But if you stick to the public service principles mentioned earlier, i.e. (a) be more aware of what citizens really need and want, and (b) define the goal as doing what it can to ensure that these needs and wishes are met, this implies listening to all citizens, young and old, and finding a fair balance of services to meet their needs, the answer could be found. Leadership, whether from young or old

Ministers, should be defined in these terms.

The future of Public Service

Investments in capital, skills and R&D should have benefits globally, and these ought to have the greatest impact in developing countries. Standards of living, proportion of people in the middle class, health, etc. should improve markedly. The overall global 'asset base', whether of traditional fixed capital or other intangible assets such as level of skills, business climate, regulatory system, social capital, etc. should increase - although population levels and economic growth will put pressure on resources and infrastructure in some places.

If we can avoid military conflict and destructive economics - big ifs of course - 20-30 years from now the challenge for public service should be managing the fruits of abundance, including an abundance of time freed up by the automation of a wide range of productive activities. This may sound like a nice problem to have! But it will demand a completely different set of public service skills. And it will require officials who are ready to rewrite tax and welfare policies, while rethinking what education is about.

In the meantime, over the next 20 years, the challenge will be keeping on track for this prosperous future. Humankind has stepped back from the brink of prosperity into conflict and chaos several times before. Wise leadership, good diplomacy and governments that are attentive to the needs and aspirations of their citizens are the essential ingredients to prevent this happening again. Foresight will be a key public service competence, so that recruitment, training and policy-making can keep the country on course for the future it wants to achieve.

experts' insights

Civil Service: Leadership, Transformation and Succession Plan

A Dialogue with Tan Sri Dr. Sulaiman Mahbob,
Datuk Dr. Abdullah Abdul Rahman and
Prof. Dr. Nik Ahmad Kamal Nik Mahmud

Three prominent figures of civil service were selected by myForesight® in our initiative to explore a top down approach on Future of Public Service. Datuk Dr. Abdullah Abdul Rahman, Tan Sri Dr. Sulaiman Mahbob are among the icons of Malaysian public service who have served and lead the public service to where it is today. While Prof. Dr. Nik Ahmad Kamal Nik Mahmud represents the academia comes with a wealth of knowledge in area of governance, legal and public management. A dialogue was conducted to gauge their knowledge and wisdom on the state of Malaysian Public Service and their future hope on the machinery in paving the way for Malaysia to be a fully developed nation by 2020.

Q: What are the challenges faced by the Public Service?

Tan Sri Sulaiman Mahbob

Leaders and senior officers in the public service can come from various background and discipline; doctors, engineers, etc., but they must be efficient. And they must be of local talents that have the capability to articulate the local social aspiration. They can come from top level private sector but must have strong private-public sector combination that understands the culture of the society. The current practice of appointing senior officials from private sector whilst the junior officers are from the public sector is very unbalanced compared to the model developed by the former Prime Minister, Tun Dr. Mahathir. The public service then had a balanced leadership combining top civil servants and top private sector personalities, which allowed the formulation of public policy in Malaysia. The nation doesn't come today or tomorrow but through evolution that was started by the late Tun Abdul Razak.

Datuk Dr. Abdullah Abdul Rahman Leadership!

The country is facing many leadership challenges. One of them is the tendency for leaders to have their own legacy. Ideas can be developed and used, but the result requires consistent and

frequent testing and feedback. Leaders need to constantly seek for feedback from their followers and take criticism as something positive toward the improvement of their leadership.

Prof. Dr. Nik Ahmad Kamal Nik Mahmud

The size of the public service!

In the United Kingdom, the government has move toward downsizing the public service ... shifting off various government agencies to semi government agencies which are smaller, thus reducing the number of public servants, and they managed to downsize the numbers substantially. The smaller semi government agencies have proven to be more efficient in terms of the service delivery, whilst freeing the government to focus on machinery and governance. However, in the context of developing nation like Malaysia, the public service still needs to look at the essential delivery services such as registration of birth/death and front liners agencies, customs and immigration, health and medical etc.

During the era of Tun Dr Mahathir's leadership, we did take the example from United Kingdom especially in their privatization initiatives. We managed to reduce a substantial number of public servants, from approximately 3 million to the current figure. Organizations like Telekom Malaysia, Tenaga Nasional and Jabatan Bekalan Air has been privatized. This has allowed



Tan Sri Dr. Sulaiman Mahbob is a former civil servant and has served the Malaysian Government for over 38 years, beginning in 1971. During the course of his civil service career, he served various ministries and departments, including the Ministry of Finance, Ministry of Domestic Trade and Consumer Affairs, and the National Economic Action Council (NEAC), the latter during the East Asian financial crisis of 1997/1998. His last position was Director General of the Economic Planning Unit (2006-2009) of the Prime Minister's Department. He has also served at the Institute of Integrity Malaysia (IIM), as its first founding President. During his tenure at the IIM (2004-2005) he established several work programmes to promote a culture of ethics and integrity within the public sector and also in the private sector in line with the Government's National Integrity Plan. He is currently the Chairman of Malaysian Institute of Economic Research (MIER).



Datuk Dr. Abdullah bin Abdul Rahman served as an Assistant State Secretary of State Secretariat, Negri Sembilan from 1968 to 1971. He was also formerly the Deputy Director (Academic) of INTAN until 1985. He served as Director of the Special Task Force on Productivity with the Prime Minister's Department until 1996. He served as Director General of MAMPU (the Malaysian Administrative, Modernization and Planning Unit). He is an active member of PTD Association (Pegawai Tadbir dan Diplomati) and committee member of PTD Alumni Association.



Prof Dr Nik Ahmad Kamal Nik Mahmod is the Head, Cluster on Governance, Law and Public Management, National Professors Council, Malaysia (Majlis Profesor Negara) and currently serves as Legal Adviser of International Islamic University Malaysia. Dr. Nik Ahmad Kamal obtained the LL.B (Hon.) from University Malaya, LL.M from the University of London and Ph.D from the University of Aberdeen, Scotland. He is a Professor in the Kulliyah (Faculty) of Laws, International Islamic University Malaysia, and was the Dean of the Kulliyah from 2000 until 2006. His research interests are mainly in the area of Public Law and he specializes in Labour and Industrial Relations Law, Administrative Law and Access to Justice. He has keen interest in Biotechnology law and WTO laws.

the government to focus on better governance and regulation. Public service in the first world countries such as in Europe is very lean and small. Only the core services such as foreign affairs, safety, health and defense are still within the government.

Q: What is required for the transformation of the civil service?

Tan Sri Dr. Sulaiman Mahbob

The current leadership transformation initiatives by having purely private sector involvement in transforming the economy and the engagement foreign consultant to help formulate the country's policy is good but must be done with cautions.

There have been indicators that there are feelings of marginalization amongst civil servants because they are not engaged and not given enough participation in policy formulation. They might have not talk about this openly, but the dissatisfactions can be sensed through their body languages and others indicators. We as Malays are very subtle in our communication, not to tell things openly, it is in our culture.

Datuk Dr. Abdullah Abdul Rahman

In order to have a successful transformation, it must be based on a positive and strong organization culture that forms the basic foundation. Core values need to be agreed upon and properly

laid out. For example, Japanese has a very solid foundation of organizational culture. Hard work, diligence, teamwork, innovation and creativity are instilled as the culture of their organization.

Prof. Dr. Nik Ahmad Kamal

It is part of cultural and ethos that transformation takes place whenever there is a change of leadership. Current leadership sees a need to open up civil service to outsiders as there will be better information for the government and more minds can be gathered to solve the nation's concerns. The trend is not only happening in Malaysia, but also elsewhere in the world such as in Europe and America.

However, the concern is their mindsets which are different from those of civil servants. Return of investment (ROI) is their main objective which is not the concern of the civil service. The main objective of the civil service is to provide smooth delivery of public goods.

The current machinery has shown significant improvement and can be considered excellent as there is less complaint about service delivery, especially with front runners such as Immigration, Customs and national registration where automation and ICT has been part of their culture.

experts' insights

Q: What is the culture that defines the civil service?

Tan Sri Sulaiman Mahbob

Civil servants nowadays are too concern with procedures. People started becoming too rigid with procedures and circulars. If you are too focused on procedures, you cannot be developmental. When you want to move forward to a higher level of economic growth in terms of creativity and innovation, you cannot have civil servants who are procedural minded. People of this kind won't dare to try and experiment because you don't want to fail. It's hard to move forward if they have this kind of attitude. They even dare not write in the daily newspapers to explain government policy. Public servant need to write to explain and make the society understand. But, because of this environment, they dare not say and even express views.

Datuk Dr. Abdullah Abdul Rahman

Culture is not only the identification of different values such as integrity and accountability. Culture must be institutionalized. Having all the institution in place does not guarantee that culture has been institutionalized. Without being institutionalized, the misconduct of the civil service may continue to reoccur.

To institutionalize values takes a lot of effort and time. Inconsistency and constant changing of values occurs because the leadership tries to create its own agenda and legacy. Constant changing of values hinders the process of instilling values. Leaders should focus on leadership and what is required by the nation.

Prof. Dr. Nik Ahmad Kamal

There are certain ethos that still need to be instilled in the culture. From the Federal Constitutional perspective, the concept of neutrality of civil service needs to support the government of the day with full loyalty without fear or favour. This is the spirit that is embedded in the constitution since its formulation. The civil servant will not get involved in political parties but will serve the political organization that is in power. However, the current political environment since the last general election has shown that the political power is no longer dominated by a certain party. This has brought new paradigm in the federal-state relationship. The recent issue in the state of Selangor on the appointment of State Secretary is an example.

The ethos of public service in the federal constitution is clear: Civil service need to give full loyalty to the government in power,

no matter who rules the government. The situation where public service is not supporting the government should not happen as it will cause problem. The current civil service has been with the existing government for a long time, and it has been the culture.

Q: Is succession plan important?

Tan Sri Sulaiman Mahbob

The succession plan is very important as the human capital in the public service is facing serious challenge to develop their intellectual capacity. Current leaders that fill the top leadership in the organization joined the service 20-30 years ago with qualification from that era. These people rose through the system, but their academic qualifications are in those areas that may not be relevant with today's globalized and competitive environment, particularly in areas of science and technology, and information technology. They might not be competent if they do not keep themselves up intellectually. But they have been appointed to the post, no matter whether they are competent or not. And they are in the position of decision making. Most of the current civil servants possess knowledge that was obtained 20-30 years ago during their first bachelor degree. This is my greatest fear.

The problem with our civil servant is that they have to go for training, seminar and visits. Who is going to do the reflection? And when are they going to do reflection? Why is this not in the public service culture? They are constrained by orthodox thinking. Thinking out of the box is difficult in public sector because of the structured nature ... the civil servants are imprisoned by the structure.

Datuk Dr. Abdullah Abdul Rahman

Leadership of the civil service must be able to provide a continuity of policy from one to the next generation leaders. Civil service need to be professional and be the core machinery of the government. The importance of civil service requires investment to develop its competency, skills, knowledge and professionalism.

The nation needs professional, competent, well-trained, dedicated civil servants. Their place is prominent because there are certain values that are crucial to the civil servant. Apart from professionalism, civil servant needs also to have neutrality and loyalty to the government in power. Civil services are neutral and do not belong to any political party. For example, the responsibility of Pegawai Tadbir dan Diplomatik (PTD) in states that are governed by political parties that are different from the federal government is to give professional advice on government machinery.

Outcome from thoughts and ideas of external parties (especially from private and non-civil servants) need to be taken with caution, and ideas need to be tested whether they are giving the right vision. One of the fundamentals of leadership is to follow the systematic approach – implement, monitor and control. There are many future leaders, but there must be a conscious choice. The current leadership should be able to identify and choose his successor from variety of choices. Let the country

Inconsistency and constant changing of values occurs because the leadership tries to create its own agenda and legacy. Constant changing of values hinders the process of instilling values.



choose the number one leader. If this is not being laid, the current leader is not fulfilling his task as a leader.

Prof. Dr. Nik Ahmad Kamal

The concern of civil servant on succession plan is the lack of transparency in the sector. The promotion of officers needs to take into consideration those with leadership qualities. Capability and competency should be the priority. A transparent succession plan needs to be in place with specific and objective criteria for any senior position based on merits. Many countries have put in place a merit system where the decision to promote and appoint a person to a high level position is not by the Prime Minister. They have a committee at the level of civil service to determine suitable candidates.

When we talk about succession plan we definitely cannot forget Gen Y. The new characteristic of Gen Y has created a generation gap in the public sector as baby boomers are currently at the top echelon of the service whilst Gen Y is starting to fill up the middle management. The situation needs to be handled carefully, especially in communication and leadership. The new characteristics of Gen Y in civil service may perhaps be an important element in the development of thinking skills and work culture as those in the upper level would be replaced sooner or later.

Q: What are the necessary changes that should be applied in the civil service?

Tan Sri Sulaiman Mahbob

There are many models of leadership that may be adapted by the civil service. These models must suit the nature of organization. It must not be one model to catch all. For example, in my position as an economist, I must be prepared to have the capability to meet up with world organizations such as World Bank and IMF to explain, argue and defend on government policy. I need to raise my intellectual level in order to be able to defend the government. But the civil servant is not nurtured in this type of leadership. Those junior officers are looking for this type of leadership and guidance, leadership that can guide and nurture them. For instance, I had the opportunity to be under the guidance of personality like Tan Sri Zain Azraai who nurtured people to be quality leaders. My greatest worry is the capacity of our civil servants that is sliding downhill. They are unable to think creatively and innovatively.

An area of concern is the ability of civil servants to match those from the academia as there are gaps in the level of intellectualism. This may hamper their capability. Another area of concern is the capabilities of ministries to function and promote area of their designated portfolios. For example, how is the Ministry Science and Technology to function without trained and qualified officers in relevant fields?

Procedures hamper creativity, limit innovation and decrease intellectual capacity of civil servants. The public service, as a regulatory body, needs to set market standards.

Datuk Dr. Abdullah Abdul Rahman

Things are changing, whether you like it or not. As the rule, if we don't change and innovate, we will be in trouble. There are many examples of organizations that don't survive in the marketplace due to this. Change is required to survive and stay competitive. The same goes to the country, we have to change. Therefore, there is the need for top leadership and strategists to examine and frequently review their strategy. A strategy which is good today may not be relevant tomorrow.

There are three basic foundations that require attention in the current situation: Effective leadership; the need for culture and values to be institutionalized; and the need to enhance the capability and capacity of civil service.

One of the factors that influence strategy is the global factor. However, the advice that comes from global society needs to be carefully examined before being accepted as they might have their own agenda. Their advice may not be good for the country. We need to think for ourselves. We can listen, but not necessary to be influenced by them.

The current civil service needs to take the wisdom of our forefathers in shaping the country's leadership. My fear is that there will be quarters that are trying to break the foundation that have been laid before.

There are three basic foundations that require attention in the current situation: Effective leadership; the need for culture and values to be institutionalized; and the need to enhance the capability and capacity of civil service.

Leaders need to be sensitive to the parameters as laid out in the federal constitution. You would not be able to understand and run the country well if you are not aware of what happened during the formulation of the constitution and events that happened during that day.

In leadership there is need to apply intellectual capacity, values and emotions. I think feelings, intuition and values need to be combined, apart from our history and tradition which are vital ingredients in human life.

The public sector needs to continuously improve its capacity and capability. Education and training with basic fundamental such as discipline, loyalty, neutrality, professionalism and forward looking is prerequisite. Public service personnel need to continue to act as a professional adviser but, at the same time, continue to be heavily involved in implementation, execution, delivering policy and services at a very high standard.

experts' insights

Prof. Dr. Nik Ahmad Kamal

The leadership of the civil service must enculturate the values of neutrality to all civil servants, especially the top level at both state and federal.

The way of thinking in civil servants in terms of their capacity to deliver need to be improved. Personalities in the civil service mostly come from distinctive public sector background. It would be beneficial to develop their leadership and thinking capacity by having them attached to the industry in the private sector. Such exercise would allow exposure to experience and transfer of knowledge. In the long term, the thinking capacity of civil servants would develop. This would result in a balanced development of commercial and social consideration in delivering public goods. The participation of those from private sector would overcome the traditional thinking of the civil service.

Dynamism to the country legislation framework in terms of internal rules and career development needs to be continuously revisited to allow intellectual capacity and talent management. In my opinion, the flexibility of rules needed in the public service is in the internal rules. The internal rule needs to adapt current circumstances. The terms and condition offered to civil servants need to be more attractive and dynamic. This is important if civil service wants to retain and attract multiple talents. Perhaps the appointment of civil servants on contractual basis for a short period of time should be allowed so that we can get variety of talents in the system for the civil service to be more concrete and solid. There is also the possibility to revisit the definition of civil service in the constitution.

Q: What is the desired scenario of public service of the future?

Tan Sri Sulaiman Mahbob

A sound economic policy is needed by the country. This should be sourced from a sound knowledge. The source of strength of civil service of the future is knowledge. The country if full of data that should be used to produce good information through analytics and detailed analysis. As a transition, there is need to strengthen the research and planning capacity with good core staff, with doctorate. Some element of market based competency would help in getting the public service to be more competitive. Upgrading their skills and intellectual capacity would ensure their relevancy in the system.

Datuk Dr. Abdullah Abdul Rahman

The public service is the core component of the government and the civil servants are the key success factor for public service of the future. Therefore, the desirable scenario of public service will be the high level of professionalism, neutrality, and competency. This will allow the government to move forward. This is the scenario in most of the developed countries such as Korea, Japan and Britain. Changing of political leaders does not give much impact to the civil service in delivering their service. PTD officers are the core of civil service. They should have very high spirit of patriotism, nationalism, loyalty and love for the country. These are the core values that will determine the future of the country.

A good civil service must also be sensitive to political development, both local and abroad. To master the art of governance and administration, the public service need to know how to deal with political issues of today. The incapability of civil servants to articulate, analyze and advice the government in power may result in ineffective or, maybe, wrong decision-making. In this context, for leaders to survive they need to be strong in certain fundamentals and articulate in areas which are negotiable as well as non-negotiable. For example, internal security, monarchy and Malay rights, principle of moderation which is the foundation of the nation. This foundation, if touched, would result in destructive effect to the nation.

Prof. Dr. Nik Ahmad Kamal

Malaysia should maintain the core sectors such as education, security and defense and the health sector under the government. I can see Malaysia moving towards a smaller civil service as the core functions are being automated through ICT that will substantially reduce the number of manpower. But I am worried about the elements of good governance.

The three elements of governance are transparency, accountability and integrity.

As for transparency, in my opinion, the public service sector is still being too secretive. The society at large seems to find it hard to access information from the public service. The government is being too bureaucratic, especially when it comes to getting data. The abundance of data available is not being fully utilized. Perhaps, the government may want to consider introducing laws on freedom of information with restriction on sensitive areas. There are still complains from researchers on the unavailability and restriction of certain data. The government needs to continuously study the existing law on freedom of information.

I feel the accountability of civil service in Malaysia is slightly misplaced. Accountability is the burden of ministers. The convention of public service is that the public servants are anonymous and faceless bureaucrats. Whatever is done is for the politician to decide. The civil servants only advice the minister and should not be at the front to defend him/her. It is the minister who has to defend them.

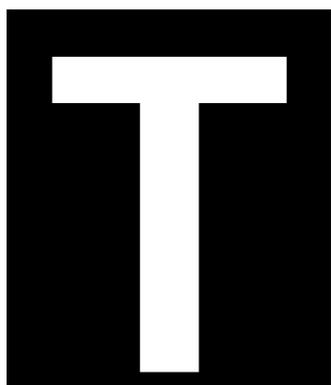
Integrity is a subject the civil service finds hard to prove. The perception of the people is that immoral activities, particularly corruption, are rampant within the public service. The society is frustrated. The advancement of information technology and social media has worsen the situation as the society has more trust in the news circulated through the internet compared to those in the mainstream news media. The situation needs to be addressed. The government and public service need to prove that corruption is successfully eradicated or, at least, there are sustained and vigorous efforts to curb it. When the perception of the rakyat improves, the impression and integrity of the nation, locally and internationally, will also improve.

COVER STORY

TRANSFORMING MALAYSIAN PUBLIC SERVICE: CHARACTERISTIC OF CHANGES FOR BETTER SERVICE



viewpoints



THE NEED FOR PUBLIC SERVICE TRANSFORMATION has been constantly mentioned by the Prime Minister, Datuk Sri Najib Razak. In the 2011 Budget speech he said,

“To attain developed nation status, we

cannot remain complacent. Success demands drastic changes, not incremental. It requires a quantum leap. Change is not an option, but an imperative. We must change or risk being left behind.”

This brought new challenges to the Malaysian Public Service. It has to transform and be excellent, especially in its service delivery in order to meet the demand from the public. The transformation should be able to response to the future needs, trends and challenges; and delivering services in an efficient and productive manner with high quality of leadership, trust, integrity and accountability.



Future of Public Service: The Characteristics

Under the Malaysian Act 132, public service is defined as an ‘administrative machinery or executive power in implementing policies and decision made by the Government in order to realise national development agenda’.

For the public service to play its role as the machinery to realise the national agenda, a strong framework or structure needs to be adopted in the public service ecosystem. Jabatan Perkhidmatan Awam (JPA) has planned and set strategic goals towards achieving vision 2020 for Malaysia to become a high income, inclusive and sustainable nation. The goals will lead the Public Service to be high performing, dynamic and citizen centric with integrity. The goals are integrated in five strategic thrusts (ST):

ST1 Enhancing Competency, Performance, Productivity and Innovativeness of Public Servants,

ST2 Enhancing Capability and Capacity to Revitalise Public Service Organisations,

ST3 Improving Efficiency and Effectiveness of Public Service Delivery,

ST4 Expanding Strategic Networking, Collaboration and Co-Creation, and

ST5 Enculturing Patriotism, Core Values, Ethos and Integrity.

These five strategic thrusts will create a lean, agile, connected, transparent and innovative tech-savvy Public Service to embrace the upcoming challenges and the complexity of the ecosystem.

1

Agile, Responsive

- Able to **anticipate situations**, adapt and react optimally to unforeseen events in a speedy and cost effective manner providing needed responses in the short term without compromising long term options.
- Able to **organize** themselves to guide public and private resources quickly to address challenges. Able to 'de-organize' themselves when specific structures and processes are no longer needed.
- Agile and adaptable, including organizational structures and processes, service delivery models, civil servants and others employed in governmental work; and flexibility in regulatory and legal structures.

2

Connected and Streamlined

- **Collaborate** across sectors, borders and organisations, with co-ventures, co-create and co-design being key features in the service delivery toolbox. This further highlights engagement of stakeholders across a variety of platforms, both physical and virtual.
- **Share** services, labour and resources through networking approaches and strategies to remain slim and streamlined while delivering their mission in effective and innovative ways.

3

Flatter

- **Citizen engagement** - decreasing the distance between government and the people through the use of social media, mobile devices and mapping tools and other communication modes; and committing to open data that provide citizens and businesses with access to much more public information in easy to use, searchable electronic formats.
- **Administrative efficiency** - decreasing layers in hierarchies between top management and line personnel, removing red tape, aided by collaborative work environments, business process redesign and business analytics to foster evidence-based decision-making.
- **Decision-making processes** - the decision-making process can be accomplished vertically as new data and analytical processes put information where it is needed by policy-makers and others; and horizontally by building collaboration within and across government departments, agencies and ministries.
- **Intergovernmental and cross-sectoral collaboration** - Networks that lie across public and private sectors, non-profit organizations and various government entities to solve complex problems, gain economies of scale and scope, and leverage innovative ideas and best practices.

4

Tech-enabled, Tech-savvy and Innovative.

- Both operationally as an organisation (processes, partnerships and financing, amongst others), as well as strategically.
- Policy, legal and regulatory frameworks and processes must be redesigned to align with the dynamics of the networked world. Information infrastructures must support new modes of collaboration, information and intensive governance.
- Innovative public sector organisations **have the ability and capacity to incubate ideas and delivery models** and accelerate their impact (scaling up via rapid prototyping)

5

Transparent

- **Transparency helps rebuild trust and keeps all parties accountable** for actions and outcomes.

Factors influencing Public Service Transformation

Public service will face unprecedented challenges that lead to complexity in the ecosystem. Therefore, the transformation plan needs to have a systematic approach in understanding the current state of public service by identifying external and internal factors that will enable future changes.

Internal and external factors are derived from pressing trends, issues and challenges. Whilst internal factors will directly influence the future changes in public service structure, system and behavior; the external factors indirectly influence public sector by giving significant effect to internal factors in creating new model in public service.

1 Demographic change

Demographic transition is by far the most significant challenge faced by most countries in the world. Population growth is slowing down, but the age structure of the population is changing. There would be an acute imbalance in the population structure as the numbers of young are falling whilst elderly are rising, creating significant future issues for the public sector, particularly in the areas of new generation of workforce participation, pensions and health costs.

It is estimated that by 2030 Malaysia will be in the category of 'ageing nation' with older persons constituting more than 15% of the population. With the rising share of the elderly in the population, apart from increased public health cost due to non-communicable diseases and disability associated with ageing, Malaysia also needs to provide funds to improve their income support schemes.

Another issue brought about by the demographic change is the rate of urbanization. According to the CIA website, the annual rate of change between 2010 and 2015 is estimated to be at 2.4%. Delivery of economic and social services need to keep abreast this change.

viewpoints



2 Public perception

Public perception provides valuable input for the government in delivering its services. Apart from delivering results, the Government has been challenged to manage perception from its citizens. Public service, as the front liner of the government's delivery system, has to ensure productive and inclusive delivery of services in order to improve public perception.

The public is very demanding. It would be difficult and almost impossible to meet all their demands. However, delivery of essential public service such as security, education and health care should always be prioritized to ensure the wellbeing of the citizen. It will indirectly improve public perception.

Public awareness increases the pressure on the government. The advancement of information technology and social media increases public awareness and has negative effect on the public perception. The public has more trust in the news circulated through the internet compared to those in the mainstream news media. One of the most damaging topics is on the integrity of the public service. Therefore, to improve public perception, the public service not only need to improve delivery but, perhaps more importantly, its integrity

3 Inequalities

High quality public services act as a form of redistribution from the rich to the poor. Thus, public service is an important mechanism for tackling socio-economic inequalities. Issues of inequality also appear in distribution of manpower as well as budget allocations in the public service. Improving the quality of public services across the board would increase the equalizing potential of these services, and inclusive development would enable the potential to be realized.

Public service needs to provide balance between economic growths and enhancing job opportunities for the citizens to enjoy the prosperity created. Public service plan should provide sustainability between economic growth,

socio-economy and society wellbeing by developing good ICT infrastructure to support public services delivery, especially in rural areas, and effective social support on targeted vulnerable group.

4 Global competitiveness

Globalization and liberalization creates complexities in global economy, bringing new challenges to the public service. It is critical to ensure that the investment made is able to create a prosperous environment for the citizens and the nation in a globalized world. Service liberalization and talent competition causing brain drain are examples that affected public service.

The Malaysian government has taken several initiatives to improve its competitiveness. The initiatives include creating opportunity for trade liberalization to generate new jobs and skillset, and better policies for industry development. Malaysia is not only focusing on economy, but national progress in a broader measure, beyond GDP, by including social and environmental elements.

i) Infrastructure and Ecosystem Initiatives: Iskandar Malaysia and Multimedia Super Corridor (MSC) initiatives focus on tax incentives, infrastructure and ecosystem development for Malaysia to achieve its economic goals.

ii) Productivity and Innovation Initiatives: Malaysia has established initiatives to enhance productivity innovation through: (a) workforce development system, (b) human capital development, and (c) minimum wage programme.

iii) Malaysia Anti-corruption initiatives: The Malaysian Anti-Corruption Commission (MACC) in 2009 witnessed the establishment of a body that is independent, transparent and professional in the efforts to curb corruption. It replaced the Anti-Corruption Agency which was under the government.

iv) Green Initiatives: 40% reduction of emissions intensity by 2020, and funds

by the Ministry of Science and Technology (MOSTI) for 286 green technology projects with an amount of approximately RM213 million.

5 Safety and Security

Rapid development and urbanization create opportunity and risk such as pandemics and crimes in the city. Safety and security is of prime importance, not only for the citizen, but are also factors that would influence investors' confidence and the region's attractiveness as a place to live and work. New set of skills is required to combat those negative issues.

Malaysia's effort to comply to ISO/IEC 27001:2007 Information Security Management System (ISMS) by CNII sectors is led by the National Security Council, supported by MAMPU and Cybersecurity Malaysia. Malaysia realizes the importance of national information security system because almost everyone is exposed to various online threats and cybercrimes including white collar crime.

Advances in information technology (cloud computing, analytics, mobile computing, etc.) create vast service opportunities in the future. Technology advancements will encourage active involvement of citizens in voluntary work such as service agents. They would be able to provide vital and accurate information about the needs and problems of their communities. This would lead to better cooperation and coproduction initiatives like community policing, *rakan cop*, *rela*, *rukun tetangga*.

6 Technology advancement

Government transformation program brings new operational environment to the public sector. The emphasis is towards efficient, personalized and citizen-centric services. Technology advancement acts as a catalyst to enhance accessibility and encourage connectivity, openness, participatory and transparency in delivering services. However, technology is changing rapidly. Today's advanced communications are surely not as sophisticated as they will be in the next decade. Challenges and

Public service, as the front liner of the government's delivery system, has to ensure productive and inclusive delivery of services in order to improve public perception.

new issues will emerge. The questions of ethics, equal access and new strategies, therefore, require multifarious methods and solutions to address those challenges.

Government faces challenges to get the most out of the big data. Public sector's data sources can make government more efficient, save money, identify fraud and help public service to provide better service to the citizens. Digital data storage is easier to access compared to printed documents and paper files. Malaysia in has moved to digital document management system. Currently, 70% of intra-government letters/memos, invitations, circulars and meeting minutes are available online. Malaysia targets to establish 90% of availability and usage of online services and 10% e-forms by 2020.

The current trend of Bring-Your-Own-Device (BYOD) creates a challenge as to how public service will fit between protecting government's data and personal privacy of its employees.

7 Leadership

Leadership is a vital component of good public governance. The difficulty remains in defining the kind of leadership that is needed in relation to current and future challenges. Given the understandable level of risk aversion in the public services, building and maintaining rapport with the public at large is vital for leaders. The public service needs leaders with a different capability profile that includes public in their vision and mission.

It is essential to have a leadership with strong values. As organisational role models, the actions of leaders send a more powerful message about acceptable behaviours than any published policies or statements. Citizen demand their leaders to be consistent, up-to-date, open and flexible; apart from the ability to make good decision, intervene whenever needed, and create long term plans.

8 Financial sustainability

Public sector financial sustainability is its financial capacity to meet the current obligations; withstand shocks; and maintain service, debt, and commitment levels at reasonable levels in relation to both national expectations and likely future income, while maintaining public confidence. To maintain financial sustainability, the government needs to emphasis on the broad and long term vision and mind set.

To achieve financial sustainability, resources need to be managed efficiently through prioritization and collaborative approaches between the organizations and the communities. Government aims to reduce the federal fiscal deficit from about four percent (4.0%) of GDP in 2013 to about three percent (3.0%) in 2015, and about zero percent (0%) by 2020. The implementation of the Goods and Services Tax (GST) in April 2015 and the gradual subsidy rationalization from September 2013 to April 2015 are two examples of government's effort for financial sustainability.

9 Governance

Transparency and accountability are essential features of good governance. Good governance is needed to sustain development momentum and ensure that benefits of growth are widely shared. Changing governance sees more specialized, lean, flat and autonomous organization being created.

Budget transparency and good practices in procurement lead to good governance. Check and balance are paramount to ensure that transparency and accountability are well practiced. These will restore the *rakyat's* confidence to the government.

viewpoints

10 Integrity & Value

The work of public servants must be grounded in a deep understanding of public sector values and principles. Current changes in the demand from society and the digital revolution posed a new challenge for Government in the journey towards a values- and ethics-based public service. Greater focus on new professional values and the innovation culture in the public sector allow the public to have better access to information and become more aware of their rights.

The advancement of ICT and the availability of social media lead to more information and knowledge exchanges. They enhance connectivity between the public service and the society; create openness and transparency that could lead to improved integrity of the systems and public perception of the public service.

According to OECD's Public Sector Integrity Reviews, integrity is the corner stone of good governance. Fostering integrity and preventing corruption in the public service supports a level playing field for businesses and is essential in the effort to maintain public trust in the government.

11 Work Environment

Public service delivery has shifted towards citizen-centric and result oriented. It has become more accessible, adaptable to change and innovative. The changes are being accelerated by the advancement of technology and changes in the demographic.

Transformation of the public service ecosystem is necessary as the current demographic change poses a challenge for public service to attract and retain the right talents. MAMPU has undertaken to rebrand the public service by introducing the Public Sector Conducive Ecosystem (EKSA). The exercise aims to provide a conducive working environment, improve work culture and inculcate positive values for public servants. These, in turn will strengthen the organisational culture, improve performance and encourage

The transformation plan needs to have a systematic approach in understanding the current state of public service by identifying external and internal factors that will enable future changes.

innovation among public sector agencies. Public Service Transformation Framework (PSTF) was constructed based on the principle and foundation of good governance, high patriotism, values, corporate ethics and integrity, inclusive and diverse ecosystem and public service environment, and science and technology advancement. It is upheld by five strategic thrusts (ST) as follows:

- ST1 – Revitalising Public Servants,
- ST2 – Reengineering Public Organisations
- ST3 – Enhancing Service Delivery
- ST4 – Inclusiveness and ownership
- ST5 – Enculturing Shared Values

12 Communication Networking

Effective public service communication is the key to the delivery of citizen-centric services. Regular communication between public service and stakeholder improves productivity and delivery of services. The creation of more interactive multichannel communications may enable the formation of networking that may lead into partnering, co-creation, co-design, coproduction, and the formation of integrated public service.

Integrated public service increases mobility and efficiency of resources through good governance and monitoring; and reduces abuse, mismanagement and irregularities in the public sector.

For the transformation of the public service to be effected positively, several vital factors have to be taken into consideration. Perhaps the most important are integrity and good governance. And, improving integrity and governance requires the combination of several factors including good and ineffective leadership, skilled,

knowledgeable and trained personnel, right attitude, and conducive working environment. Leaders and personnel should be equipped with knowledge and skill to keep abreast with the advancement of technology to face the ever rising public expectation, resource constrain and global competition. They must have the capability to deliver the services required of them efficiently.

Public perception is perhaps the most difficult part in the transformation process. To improve public perception, apart from effective and efficient service delivery, the public service needs to be clean and transparent. The public need to be informed and engaged through regular and effective communication.

References

1. Accenture Outlook: Public Service: Coup d'état Radically rethinking public services
2. THE FUTURE OF PUBLIC SERVICES: Emerging findings from the Tri-borough Community Budget pilot
3. Institute for Fiscal Studies: The public sector workforce: past, present and future
4. World Economic Forum (<http://www.weforum.org/>)
5. World Bank (<http://info.worldbank.org>)
6. International Budget Partnership (<http://internationalbudget.org/>)
7. Public Service Delivery Malaysia & UN Public Administration Programme (<http://unpan3.un.org/>)
8. McKinsey Global Institute (<http://www.mckinsey.com/>)
9. Project NexGen PSD, Public Service Department of Malaysia
10. Future of Government – www.psrc.pwc.com
11. The Future of Government Lessons Learned from around the World – World Economic Forum
12. OECD, Public Sector Integrity Reviews (<http://www.oecd.org/corruption/ethics/publicsectorintegrityreviews.htm>)
13. Public Service Department of Malaysia (<http://www.jpa.gov.my/>)



Leading for Innovation: Creating the Public Sector of the Future



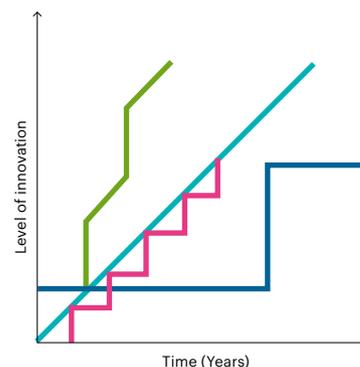
by
NADIA SULLIVAN
nadiasullivan@might.org.my

Innovation is often associated with technological advances, new inventions, and/or new ideas. Actually innovation is broader than that. It is the ability to apply new ideas to products, processes, organizational practices and business models. Innovation is a tool that can transform the way organization do business and enable the business to respond proactively to problems and/or opportunities presented by an increasingly globalized, knowledge-intensive marketplace. Innovation has become the new driver for productivity in the 21st century.

There are four types of innovation:

- **Strategic Innovation**
 - Quantum leaps of innovation
 - Occur less frequently
- **Tactical Innovation**
 - Variations on an existing theme
 - Occur most frequently
- **Cumulative Innovation**
 - High Performance
 - Achieved when organization innovates at all levels
- **Operational Innovation**
 - Small improvements to existing operations
 - Made on day to day basis

Organizations that have achieved strategic innovation must also apply tactical innovations to introduce variations into the invention, whilst operational innovation helps to optimize their systems to maintain their market advantage for a long term. Regardless to the nature of business, an organization must innovate tactically and operationally to ensure sustainability, profitability and to stay relevant and updated.



Adapted from MacKenzie, L. (2004), *Surviving in the Corporate Jungle: Strategies for becoming an innovative organisation*. In *Innovation and Imagination at Work*. McGraw Hill. Sydney.

Innovation in the public sector

Does public sector need innovation? Obviously it does, as enhancing public sector performance is a key goal of governments around the world. Innovation in the public sector, particularly in policy development, program design and service delivery is necessary for it to be able to dispense better public services, more sensitive and responsive to community needs, and more efficient. Innovation is a forward-looking

viewpoints

strategy, including some over the horizon thinking.

Public sector leaders often speak on the importance of innovation that needs to be fostered, recognized and rewarded throughout the organizations, 'top-down' and 'bottom-up'. Many agencies and departments perceived innovation as a value or behavior to be encouraged.

It is important that leaders 'walk the talk'. Innovation must be embedded in the corporate strategy to ensure better performance and to project productivity. Public sector whose leaders are consistent and persistent in disseminating the innovation culture into the organization and are willing to provide staff adequate training and development opportunities are more likely to be successful than those that do not.

For innovation to be successful there must be structured processes and resources to examine, try, support and conduct new ideas. Without such efficient and effective processes, inspirational and forward-looking ideas would not be transformed into new policies, services or methods of operation.

Public sector innovation would hardly be translated into outcomes without effective foresight and implementation. Influential and talented individuals are needed to identify those ideas. These individuals are the leaders with 'Meta Skills', the requirement for effective leadership in the 21st century.

21st Century 'Meta Skills' for Leaders:

- **Engagement:** Being able to motivate people through a sense of purpose, connection and commitment.
- **Utilization:** Knowing how to 'mine' the vast store of under-utilized knowledge, experience, and wisdom languishing at every workplace.
- **Agility:** Being able to adapt or respond quickly in transitional times.
- **Creativity:** Flexibility of thought that seeks new and/or original ways of thinking to solve complex problems. Creative thinking has become the core of leadership competency.
- **Thinking strategically:** See the big picture, be future focused and examine

the situation from different points of view. Think global but act local.

- **Democratization:** Share ideas, influence and decision making. 'Leading from the top' vs 'leading from the middle'.
- **Entrepreneurialism:** See opportunities and add value.

Drivers for Innovation

Innovation is driven by motivated and cultivated variety of short, medium and long term factors. In any public service, the driving factor for innovation is the ability to respond effectively and efficiently to the new changing government and society expectation in a gradually complicated environment. Examples include the impact of ageing population; addressing stubborn social problems such as drug abuse and vulnerable community; supporting communities in rural and remote place; national security and counter-terrorism; increasing concerns about climate change; the appropriate regulation of global financial markets and sustainable, effective and fair international development assistance.

To understand the issue in a more comprehensive way, one has to look at the innovation in health policy and how it responds to long term factors such as ageing population, socio-economic status, fast growing cost of new technologies, and other identifiable issues such as health awareness and lifestyle. Innovation in health care may be driven by government's engagement in response to community concerns, medical research and technology improvements or local responses to local issues.

Innovation Framework

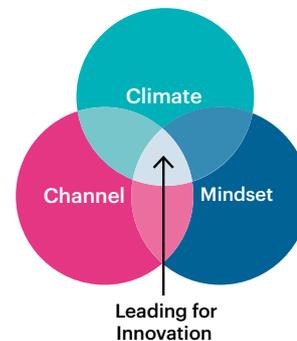
According to innovation edge, Australia, there are three drivers of innovation that organization can adopt and implement.

1. **Mindset** - Learning the tools for idea generation, exploration and evaluation and how to apply them.
2. **Climate** - Creating an organizational culture in which innovation can flourish.
3. **Channels** - Establishing the routes and information channels through which innovation can flow.

Creating the mindset of innovation

Thomas Edison said it over a century ago, "Genius is one percent inspiration, 99 percent perspiration". Innovation begins

For innovation to be successful there must be structured processes and resources to examine, try, support and conduct new ideas.



with someone being prepared to think a little differently. On the other hand, people who live in mental ruts block innovation and ruin innovative ideas. Innovative companies encourage innovation by creating the right climate for employees to cultivate the innovative mindset to think different, act different, and achieve extraordinary success.

Creating the climate for innovation

Creating a climate for innovation is about consistently welcoming and considering innovative ideas as a natural part of the working life. Such environment encourages creativity and influences productivity within the organization. It establishes an environment of trust where everyone feels empowered to contribute to the wellbeing and sustainability of the organization.

Creating the channels for innovation

The best way of opening the channels and platforms for innovation is to encourage open communication, collaboration and knowledge sharing with colleagues, clients, competitors and the community.

Source:

1. Innovation Edge, Australia. (www.innovationedge.com.au)
2. Innovation in the Public Sector: Enabling Better Performance, Driving New Directions- Ian Mcphee, PSM
3. UNDP: Public Service Innovation Lab
4. UN: Promoting Innovation in the Public Services Sector. Review of experiences and policies, 2011.
5. Ideas at Work: Creating an Innovative Public Sector. Discussion paper 2013.
6. Innovation in the Public Sector: A systematic Review and Future Research Agenda.

Connecting the Dots in the Public Service



by
DR MAZIAH CHE YUSOFF
SENIOR RESEARCH FELLOW,
INTAN
drmaziah@intanbk.intan.my

Each day, the growth of complexity seems to be more elusive and fleeting. The global outlook is so vibrant that having any medium or long term plans such as the 10th Malaysia Plan (2011-2015) and New Economic Model (2011-2020) are deemed to be outmoded and no longer relevant. There is a growing notion that government direct intervention should be kept to the minimum and economy should be freely left to market forces. Many have argued that the success of past experiences should not be the basis for future action and a fresh approach is, therefore, needed for Malaysia to face the challenges and uncertainties of the current global scenarios. There are suggestions that

for Malaysia to be globally competitive, the market should be agile enough for the private sectors to respond to the changing environment. And, for that flexible market to exist the government should stay out of the market. Market forces should direct the country's resources into businesses in which Malaysia has clear comparative advantages.

As Malaysia has yet to gain back its growth momentum since the Asian financial crisis of 1997/1998 and the traditional growth engine has been slowing down, there are fears that Malaysia will have a tough time not only to remain competitive as a high-volume and low-cost producer, but also to

move up the value chain for knowledge and innovation based products and services.

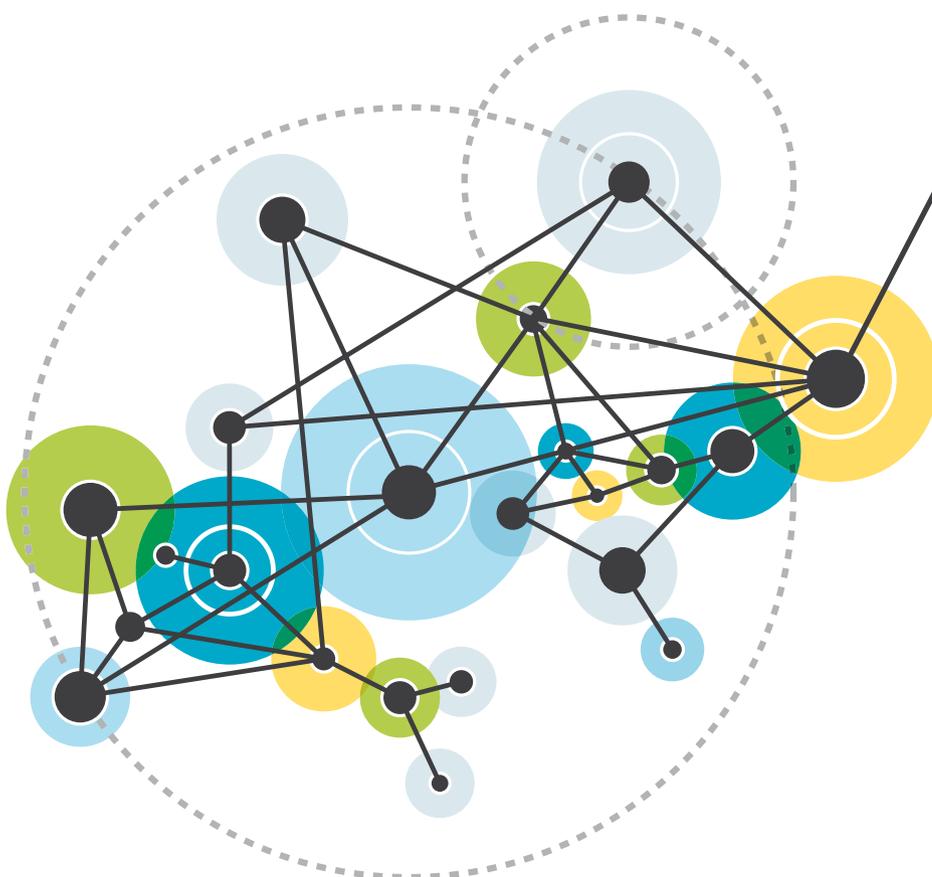
Malaysia needs fundamentally new game changers to sustain the current growth and to leap forward to achieve its vision to be a developed and high income nation by 2020. The roadmap to achieve this nation's aspiration is not as clear as when the idea was mooted in 1990s. Neither is the way to move forward. So, questions were raised on the need for a long term national plan such as the upcoming 11th Malaysian Plan: Is national development planning still relevant today? Even if our planning is on the right track, are we sure of the right approach to take as what works today might become obsolete tomorrow? It is within this context that the relevancy of the national development plan is debated.

Nation's Aspiration: Growth with Quality

Is government policy necessary to establish a competitive market?

The popular assumption is that market forces rely on economic agents that are motivated to optimize the satisfaction of their preferences on the basis of rational choice. In reality, this is not so as they are also influenced by sentiment, greed and unrealistic expectations. The rapid recovery of China's economy provided evidence on the important role of state enterprises in initiating a revival of growth. As for Malaysia, the last four decades of growth was the result of sound economic policies. Those successes would not be realized if Malaysia allowed complete free market. The underlying principle in the national development planning is that economic growth is not an end in itself but a mean to prosperity and a better quality of life. The Malaysian development path is to have growth with quality. Desire for wealth should not override other moral obligations.

Ideally, higher economy growth leads to a better quality of life. But, in reality, higher



viewpoints

income does not always improve quality of life. Even though people with more income have higher purchasing power, it does not guarantee them greater well-being and happier life. Happiness and well-being do not just come from wealth creation but also from non-material factors. Thus, in pursuing economic growth, we accord equal prominence to societies' well-being. This is to ensure that the country's prosperity is sustainable and translated into an improved quality of life. The nation's aspiration of quality growth is very well reflected under the principles of 1Malaysia: People First, Performance Now. Strategies and approaches taken to drive Malaysia towards a developed nation will not compromise the criteria that define the people's well-being. The 2012 budget formulated with the theme 'National Transformation Policy: Welfare for the People and Well-Being for the Nation' has reinforced this spirit. The 2015 budget on the 'People Economy' further strengthened the government's commitment to safeguard the well-being of the rakyat.

Quality growth means Malaysians shall not only be able to enjoy higher per capita income but will also have a better quality of life. Thus, Malaysians will have better access to, among others, greener environment; affordable house; safe workplace and communities; quality education and health services; as well as efficient transportation and communication system. New Economic Model, together with Government Transformation Program and Economic Transformation Program, and 10th Malaysian Plan supported by holistic development plans, reflect the nation's aspiration to become a developed high-income country with better quality of life.

Like most developing countries, national development planning is a dominant policy instrument for Malaysia to accelerate both the economic growth and the social development. In 1960s, the plans focused on the modernization of traditional sectors such as agriculture and mining. In 1970s and 1980s, the priority shifted to poverty eradication and income distribution with emphasis on the development of large scale infrastructure projects like the North South Highway and the Penang Bridge. In 1990s, efforts were concentrated on capacity and capability building of industrial and manufacturing sectors. Since 2000, the focus is on knowledge management, human capital development and ICT. This development model has proven to be

As for Malaysia, the last four decades of growth was the result of sound economic policies.



Strategies and approaches taken to drive Malaysia towards a developed nation will not compromise the criteria that define the people's well-being.

successful in charting impressive economic growth and improving public service delivery.

Alignment and Consistency: uphold the common highest priority

In meeting the nation's inspiration, it is imperative that the civil servants of more than 200 different schemes of services, working in various ministries and agencies, uphold the common policy framework or the principle of consensus. The many ministries and agencies in the public sector need to be aligned on the common highest priority. The development plan seeks to achieve alignment and consistency among different socioeconomic objectives. Some desirable

economic goals are likely to conflict with others. Different ministries have different core functions with different KPIs (key performance indicators) to deliver. In doing so, they require the same or different things which sometimes might be contradictory to one another. It may be possible to attract more foreign investors by providing more incentives. But in doing so, the measures applied may also cause negative impact on other economic sectors. Restoring market prices for goods and services will improve economic efficiency but, in doing so, it may initially raise consumer prices and costs of doing business. Undertake subsidy rationalization and introduce Goods and Services Tax (GST) will enhance economic sustainability but the restructuring process

can be painful. Addressing the problem of urban poverty and improving infrastructure require lots of public funds but could not be negated as measures are needed to maintain a balance with achieving high investments in urban areas. The falling crude oil prices since November 2014 would allow the government to save on subsidies but, at the same time, it would also affect the government's revenue. Thus, having a national development plan provides greater focus on the whole of government's approach. Each ministry needs to see its contribution as part of the bigger picture. The national plans are the reference documents for the civil servants not to lose sight of the forest for the trees.

One of the critical challenges in connecting the dots in the public service is how to break down the silo mentality among the different ministries. In striving to do so, the challenge is not only about how to get the message across but also on how to strike the balance among the different priorities. There should be prudent spending as not to put more pressure on the current account deficit but, at the same time, should not be too prudent that it could jeopardize the potential growth of the country. There is only one vision for the nation and there are so many ways on how to achieve that vision. Each ministry is set up for a specific purpose but all of them have the same ultimate destination - that is to achieve the nation's aspiration. Ministries can take different routes towards the same destination. The ability to see the big picture and the significant of connecting the dots among ministries to the common highest priority are no doubt the key success factors for a diverse organization such as the Malaysian public sector.

Clear Visions of the Future

By exercising the whole of government approach, the development plan provides clear visions of the future and identifies long and medium term strategies to achieve multiple outcomes. Organizing and analyzing diverse mixture of data in the planning process helps bring clarity to possible future events. The point is of course not to predict the future, but to be better prepared for potential developments and to deal with new type of challenges. Economic planning assesses the current state of the economy; designs various types of initiatives to break barriers or bottlenecks in important economic sectors; and provides improvement on the coordination between different parts of the economy. The planning

In meeting the nation's inspiration, it is imperative that the civil servants of more than 200 different schemes of services, working in various ministries and agencies, uphold the common policy framework or the principle of consensus.

process tests the ability to acknowledge the prospect and work through possible consequences. Without it, there would be a lack of shock absorbers when we hit bumps on the road. Henry Kissinger once said: "if you don't know where you are going, every road will get you nowhere".

Clear Direction for Strategic Collaboration

We practice a mixed system approach in our development plans: the government sets directions and private enterprises are free to operate. This mixed system is an intermediate system between two extremes - centralized planning and laissez faire. The centralized planning exists in socialist countries such as Cuba and North Korea. At the other extreme, the laissez faire or the free enterprise advocates the non-involvement of the state in business and the economy. Between these two extremes, the mixed system calls for the state to have a role in setting the economic direction and providing facilitation, through loose regulation, for the private operators to drive the economic growth of the country. This approach adopts market oriented policies to encourage private sector investment. Hence, the plan provides clear direction with flexible strategies as well as forming the basis for strategic collaboration between the government and private sector. The development efforts are premised on a pro-business strategy. The national plan redefines the role of government to facilitate the private sector to be the engine of growth. This collaboration of government and private sector is crucial for the nation's progress.

Concluding Remarks: Sense the pulse of the people

It is undeniable that some serious revamps are necessary. However, there is no need to start from scratch as the foundations are all there. The development plans have served as strong foundations to shift the growth trajectory from a low income to an upper middle income nation for the past four decades. What we need is a new game

changer to forge the way to the future of Malaysia as a developed nation. Malaysia needs to foster innovation and upgrading in products and processes. Thus, the answer on how Malaysia can regain its growth momentum is not on the relevancy of the national development plan. It is about the right priorities of the right sectors at the right time. Identifying the right investment, the right catalyst and the right innovation is crucial to complete an equation to accelerate growth.

The market economy, left unattended, can be vicious. Having long term plans give us the opportunity to leverage on diversity, to integrate with the global world and to build bridges and effective partnerships. This adopted mixed system in the Malaysian development planning process helps align and connect the dots in the public service; provides clear direction and forms the basis for strategic collaboration between government and private sector. These are the unique features of the Malaysian development plans that have served well in the past and should continue to be the thrust for the future. The debate on the relevancy of the national development plan could be envisaged in terms of more-or-less rather than either-or. It might be useful to keep in mind that planning is an iterative process involving a series of small step forward.

The nation's aspiration to have quality growth provides clear signal to both the civil servants to be receptive and proactive, and to the public sector to be a pleasant place. In striving to provide effective and efficient service to realize the vision to be a high income country (growth), civil servants should not lose the ability to sense the pulse of the rakyat (quality of life). The plans do not focus solely on economic data analysis, but to equally address the people's well-being. Hence, development planning is unavoidable. With a plan in hand, we can always see how much we have progressed in meeting our goal and how far we are from our destination. Knowing where we are is essential for making good decisions on where to go or what to do next.

experts' insights

What They Say:

Compilation of insights by the leaders in addressing the Drivers of Change that shaping the Future of Public Service, both internal and external factors.

Leadership

...leadership and visible commitment are critical and central to the success of transformation, as “Change Champions” ...setting direction and influencing important stakeholders to provide support and commitment to effect change at each respective ministry...”



Tan Sri Dr. Ali Bin Hamsa
Chief Secretary to the Government

Work Environment

“... MANY POLICY MEASURES HAVE BEEN PROPOSED BOTH UNDER WORKPLACE TRANSFORMATION AND WORKFORCE TRANSFORMATION. AS THE MINISTRY PUTS IN PLACE THE MANY OPERATIONAL PLANS TO ACHIEVE THE DESIRED STATE, IT IS IMPORTANT THAT ALL STAKEHOLDERS AND SOCIAL PARTNERS AND THE RAKYAT IN GENERAL COME ON BOARD AND RECOGNIZE THE IMPLICATIONS OF NOT MOVING FORWARD WITHIN THE GLOBAL CONTEXTS...”



Dato' R. Segarajah
Secretary-General of Human Resources Ministry

Integrity & Values

“...a successful transformation must be based on a positive strong organization culture that forms the foundation. Culture is not only identification of values but culture must be institutionalized

“...public servants need instill the work culture of professionalism, neutrality and excellent competency and high capability”...



Datuk Dr Abdullah Abdul Rahman
Adjunct Professor, UniRazak School of Government

Communication & Networking

“...The key to effective communication with the public is getting the message to the audience. If the Government does not take a pro-active stance in informing the rakyat of its aspirations and achievements, the rakyat might find themselves looking at distorted information manipulated by some quarters...”



Dato' Seri Kamaruddin Siaraf
Commission Member of the Malaysian Communications and Multimedia Commission

DRIVERS OF CHANGE

Internal Factors

Financial Sustainability

“... The Government annually spends billions in operating and development expenditure on programmes and activities. Is this done on the basis of the 3Es – Economy, Efficiency and Effectiveness – which are the hallmark of value for money?...”



Tan Sri Dato' Setia Ambrin Buang
Auditor-General of Malaysia

Governance

“...need to understand and instill the concept of neutrality with professionalism, high accountability and full loyalty”

“...capacity and competency of civil servants requires extensive and continuous exposure of young minds in order to develop their thinking and leadership skills”

“...THREE PILLARS OF GOVERNANCE WHICH CONSIST OF TRANSPARENCY, ACCOUNTABILITY AND INTEGRITY. THE CHALLENGE IS HOW TO TRANSLATE AND INCULCATE THOSE PILLARS INTO THE CURRENT SYSTEM AND CULTURE”



Prof. Dr. Nik Ahmad Kamal Nik Mahmood
Head, Cluster of Governance, Law and Public Management
Majlis Profesor Negara

Global Competitiveness

"...public and private sector initiatives have lessened the impact and enabled Malaysia to maintain growth and resilience in the economy... work together collectively to improve regulations for effective decision making, that will support Malaysia's continuous endeavor to advance its competitiveness, in the context of achieving a high income economy status by 2020..."



Datuk Dr. Rebecca Fatima Sta Maria
Secretary General, Ministry of International Trade and Industry

Demographic Change

OUR SOCIETY SHOULD SEEK TO BECOME "AGE NEUTRAL". AGE IS A POOR PROXY FOR, FOR EXAMPLE, ABILITY, EXPERIENCE, SKILLS, KNOWLEDGE, AND WEALTH, AND YET POLICIES IN THE PRIVATE, PUBLIC AND VOLUNTARY SECTOR ARE FAR TOO OFTEN BASED ON AGE....



The Impact of Demographic Change on Public Services Report,
International Longevity Centre, UK

Public Perception

"...THE WORLD IS CHANGING DYNAMICALLY, PUBLIC SERVICE NEEDS TO BREAK OUT FROM TOO PROCEDURAL AND BE CREATIVE AND INNOVATIVE.."

"...knowledge is source of power of civil service"
"...policy making needs to be driven by strong research and analysis activities."



Tan Sri Dr. Sulaiman Mahbob
Chairman of Malaysian Institute of Economic Research

DRIVERS
OF CHANGE

External Factors

Technology Advancement

"...Technology is changing rapidly, and today's advanced communications are surely not as sophisticated as they will be in the next decade. Challenges and new issues will emerge. The questions of ethics, equal access and new strategies therefore require multifarious methods and solutions to address those challenges..."



Professor Dr Mohd Ekhwan Toriman
Deputy VC (Research & Innovation), Universiti Sultan Zainal Abidin

Inequalities

" ...Young people should be actively involved in expressing their thoughts and ideas for the betterment of policy particularly those related to inequalities directly or indirectly..."



Ms. Ediola Pashollari
Secretary General
World Assembly of Youth, Malaysia

Safety & Security

"...Security is so interlinked with the competitiveness of a market and a country that we in the public sector often, and mistakenly I might add, set it quite apart from competitiveness. ..."



Tan Sri Mahmood Adam
Former Secretary General Ministry of Home Affairs

viewpoints

The Study of the Perception Towards the Implementation of JPA Transformation



by
DR ANESEEB IBRAHIM
SENIOR RESEARCH FELLOW,
INTAN
aneseeb@intanbk.intan.my

This study is a follow up to the first Study on the Perception of JPA Staff towards the Implementation of JPA Transformation which was conducted in August 2013. The second Study on the Perception of JPA Staff towards the Implementation of JPA Transformation was carried out by INTAN in December, 2013. A total of 337 responses were recorded by the online system which was opened from the 12th until the 27th of the month.

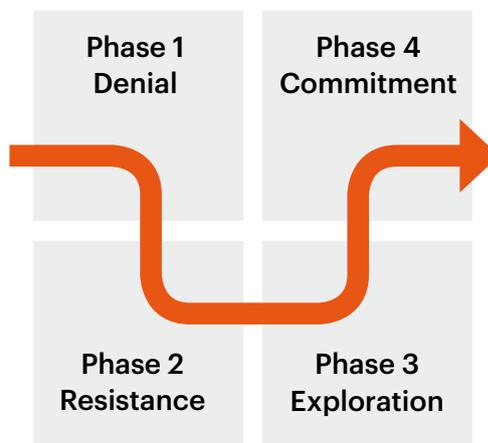
Methodology

In the first study, reaction of JPA staff towards the transformation process was gauged using a few items chosen from the Kubler-Ross model. Those items however, were not particularly measuring a specific construct. Rather, analyses were conducted on item-by-item basis. For this follow up study, another model was chosen to become the basis, namely the Change Curve developed by Dennis T. Jaffe and Cynthia Scott¹. This model divides the stages that human beings go through as they react to dramatic changes that occur around them into four phases, namely *denial*, *resistance*, *exploration* and *commitment*. In the context of this study, this model explains the phases that each individual JPA staff passes through as a reaction to the changes brought about by the implementation of JPA Transformation which had started since May 2013.

The first phase, *denial*, begins when people hear about the change, but they choose to ignore the change and act as if nothing is happening. They are comfortable with the status quo and decide not to pay any attention to the vast amount of information that suggests change process must

be implemented. Following *denial*, *resistance* begins when there is a realisation that change will happen, whether they like it or not. The *realisation* is followed by feelings of upset, anger, and frustration over what is happening. They feel hardship, lack of confidence and not ready to respond to the change.

People move into *exploration* when they acknowledge their feelings and accept that change is necessary and important. They start to think about what they can do and what is possible. They decide to make the best of it, learn new skills and seek new ideas. They begin to see the change as an opportunity, rather than a threat. At the *commitment* phase, the change that has been happening is already accepted. People have regained productivity and feel a sense of relief and accomplishment. They have shifted focus from their own personal fortunes to the organisational and team needs. They have new skills, and will not return to the old ways. They are now ready to face more challenges and new change initiatives.



**Jabatan
Perkhidmatan Awam (JPA)**
(The Public Service
Department)

The Public Service Department of Malaysia (PSD), as a central agency responsible for public sector human resource and organisational development, has a crucial role in facilitating Malaysia's journey towards a developed nation by 2020.

One of its main functions is to ensure that the human resource and organisational infrastructure in the public service supports and meets the national development agenda.

The PSD embarked on a Public Service Transformation Programme to transform the public service in 2013 that focuses on five strategic thrusts namely:

- revitalising public servants (talent development);
- re-engineering public service organisations (organisational development);
- enhancing service delivery (citizen-centric);
- intensifying engagement (inclusiveness); and
- enculturing shared values (patriotism, ethos and integrity).

The goal of the transformation programme is to create a high performing, dynamic and citizen-centric public service imbued with integrity.

PSD manages four main customer groups namely 734 agencies, 1.52 million public servants, 660,000 pension recipients and 50,000 sponsored students.

¹Dennis T. Jaffe and Cynthia Scott. (2003). Mastering the Change Curve. HRDQ

Findings

Respondents

Of the total of 337 responses received until 27th December 2013, 332 were identified to be suitable for analysis. Of this number, 129 respondents were males (39.3%) 199 females (60.7%) and the rest (4) were unidentified. Most of those who responded to the survey were between the age of 25 and 35 (61.3%). This is followed by those between the age of 36 and 45 years (18.7%), and those more than 46 years old (17.2%).

Age group	Numbers	Percentage (valid)
Under 25 years	9	2.7
25 – 35 years	203	61.3
36 – 45 years	62	18.7
46 years and above	59	17.2

There are more respondents from the Supporting Group compared to the Administrative and Professional Group (195 to 131, or 59.8% to 40.2%). Majority of respondents have been in JPA between 3 to 6 years (33%). This is followed by those who have more than 10 years under their belt working in JPA (31.8%), and then by those who recorded between 7 and 10 years (25.5%).

Years in service in JPA	Numbers	Percentage (valid)
Less than 3 years	32	9.7
3 – 6 years	109	33.0
7 – 10 years	84	25.5
more than 10 years	105	31.6

Instrument

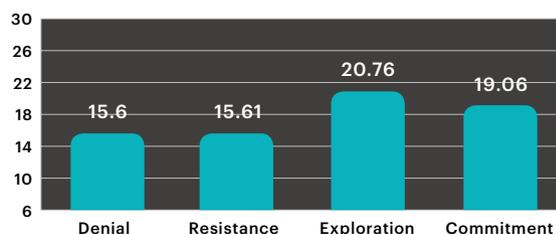
Jaffe and Scott reported the reliability values of the scales which were not very high, especially for *resistance* and *commitment*. Low Cronbach's alpha values provide weak evidence that the items of the scales are consistent in their 'movement'. In other words, the scales might not be very reliable. For this study however, the alphas recorded are as high as or higher than those reported by Jaffe and Scott. Not only they are higher, they also fall into the range which some authors consider indicative of strong reliability. The values are presented in the table below.

Phases	Alpha of this study	Alpha reported by Jaffe & Scott
Denial	0.76	0.77
Resistance	0.84	0.46
Exploration	0.76	0.66
Commitment	0.83	0.27

Overall score

Overall, JPA staff recorded the **highest total score for exploration, which is 20.76** or 61.5%. **The second highest score was recorded for commitment with a score of 19.06** or 56.7%. Meanwhile the total scores for denial and resistance were relatively low at 15.60 and 15.61 respectively (about 40.0% both). Visually, the total scores are presented in the graph below.

Overall score



Both *exploration* and *commitment* are phases which are positive to the change process. Those are the two phases management wants all their people to be in. On the other hand, *denial* and *resistance* are detrimental to the change, at least if majority of the people in the organisation could not get out of the phases quickly enough. With the two highest scores recorded for positive phases (and the two lowest for negative phases), it may be concluded that **JPA staff as a whole are at the right stages in terms of their reactions to the implementation of JPA Transformation.**

This finding is different to the one from the August 2013 study, where JPA staff was found to be in the stages of '*immobilised*' and '*bargaining*'. The phase of immobilisation is closely related to denial, while bargaining can be said to be somewhere between *resistance* and *exploration*. Comparing the findings of the two studies, it is suggested that **since August 2013, JPA staff have moved in the positive direction with regards to their reactions to the change process.**

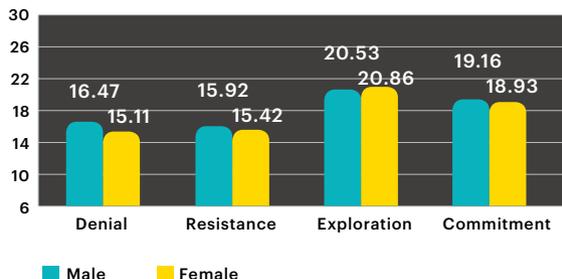


The management should not take for granted the seemingly large percentage of those who are already in the exploration and commitment phases.

viewpoints

Comparing between the gender

Score based on gender



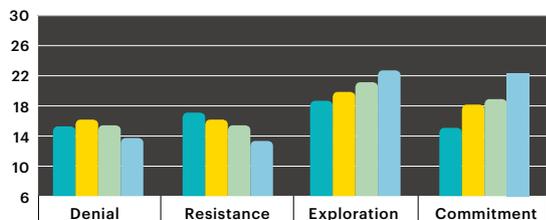
As depicted in the chart, there are differences in the scores between male and female respondents for all four phases. We would like to know whether the observed differences from the data are also indicative of 'real' differences in the population of all JPA staff. The following statistical test answers that question.

Phase	T value	P value
Denial	2.555	0.011
Resistance	0.922	0.357
Exploration	-0.745	0.457
Commitment	0.456	0.649

The t-test (comparison of means) shows that there is a significant difference in score between male and female respondents for *denial*. The difference observed indicates that females have lower *denial* score than males, suggesting that female staff is at a better position compared to their male colleagues. No similar significance is observed for the other three phases.

Comparing among the age groups

Score based on age group



Age Group	Denial	Resistance	Exploration	Commitment
Below 25	15.31	17.22	18.78	15.22
25 - 35	16.15	16.19	20.05	18.26
36 - 45	15.46	15.49	21.30	19.05
46 and above	13.83	13.38	22.97	22.45

It could be seen visually that the scores for *denial* and *resistance* tend to decrease as the respondents' age gets higher. On the other hand, scores for exploration and commitment increase with age. This observation suggests that as JPA staff gets older, they get more positive in terms of their reactions towards the changes that are happening around them.

Phase	T value	P value
Denial	3.89	0.009
Resistance	5.62	0.001
Exploration	10.41	0.000
Commitment	17.89	0.000

Analysis of variance (ANOVA) was utilised to test whether the observed differences among the age groups were significant for each of the four phases. Results support significant differences (Table above), but the significant difference is not between all age groups. For *denial*, significant difference exists between those in the age group of 25 to 35 years with those 46 and above ($p = 0.005$). As observed from the data, those in the latter group score higher.

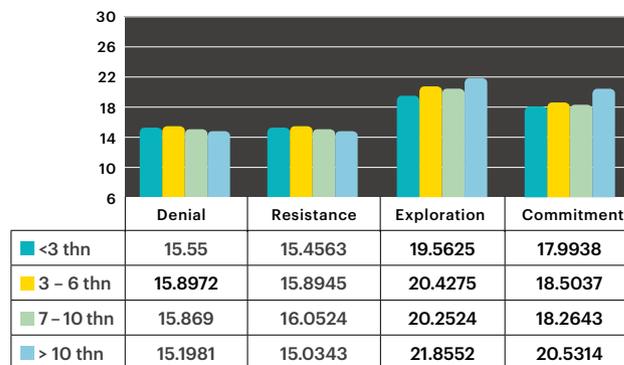
Similarly for *resistance*, test indicates that the significant difference is between the age group of 25 to 35 and the 46 and above. As for *denial*, the older group scores higher in *resistance*. This suggests that this group has higher resistance level compared to those in the age group of between 25 and 35.

For *exploration*, significant differences occur between those below 25 years and those 46 and above ($p = 0.011$). In addition, significant difference is also indicated between the age group of 25 to 35 and those 46 and above ($p < 0.000$). In both instances, the older group scores higher. For *commitment*, the group of 46 and above scores significantly higher compared to all other age groups, with p values less than 0.000 in all instances.

Findings based on years in JPA

When total scores are compared among the number of years respondents have been with JPA, significant differences are seen for exploration ($p = 0.003$) and commitment ($p < 0.000$). There is no difference for *denial* and *resistance*.

Score based on years in JPA



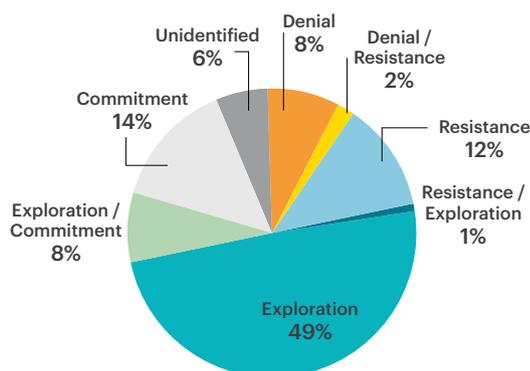
Those who have been in JPA for more than 10 years record higher score in exploration compared to those with 7 to 10 years, 3 to 6 years and those with less than 3 years in JPA ($p = 0.019, 0.04$ and 0.027 respectively). Meanwhile for *commitment*, the differences are recorded with p -values of $0.024, 0.004$ and 0.002 respectively.

Additional analyses

When the report of the second study was presented to the meeting of JPA Management on the 29th of January, 2014, the meeting proposed that the percentage of staff in each of the four phases of the change curve is identified. In response to the meeting's decision, the following discussion is presented:

- The instrument developed by Jaffe and Scott measures the level of each of the four phases (*denial, resistance, exploration and commitment*) within an individual as the responses to the on-going changes. In other words, each person has a little bit of denial, resistance, exploration and commitment within him/herself. The phase for which he scores highest among the four is considered as his dominant state. The states of the other three phases are still present within the individual, but they are not the dominant reactions.
- The same analogy can be applied to the overall JPA staff. If all JPA staff is considered as one big individual, 'he' would have individual score for each of the four phases, and the phase with the highest score is considered as the dominant reaction phase. As shown earlier, the highest score for the overall JPA staff is for *exploration*. This is followed quite closely by *commitment*. Scores for *denial* and *resistance* are much lower (both about 40%, compared to 61.5% for *exploration* and 54.4% for *commitment*).
- To divide all respondents into four distinct dominant reaction phases as proposed by the meeting, the dominant phase for each individual respondent has to be identified. This is done by identifying the highest score of each of them. Some of the respondents have more than one highest score. In these situations, the cases are considered valid only if the highest scores correspond to adjacent phases (*denial and resistance, resistance and exploration, and so on*). For these respondents, their dominant phase is taken to be the combination between the two main phases. The results of this analysis are presented in the following pie chart.

Respondents based on dominant phases



Everyone has a little bit of denial, resistance, exploration and commitment within him/herself.

- The chart shows that 8% of JPA staff are dominantly in the state of *denial*, 12% in *resistance*, 49% in *exploration* and 14% in *commitment*. In addition to the main phases, there are 2% of respondents in between *denial* and *resistance*, 1% between *resistance* and *exploration*, and 8% between *exploration* and *commitment*. A total of 6% have unidentified dominant phase due to more than two similar highest scores, or two similar highest scores for non-adjacent phases.
- The first two phases are negative states to be in with regards to the staff's contribution to the implementation of JPA transformation. The other two, meanwhile, are the positive states. Those in the in-between phases can also be considered positive or negative depending on the position. In this regard, the total percentage of all JPA staff who seem to be in the positive states towards the implementation of JPA transformation is 72% (inclusive of the following phases: *resistance/ exploration, exploration, exploration/ commitment and commitment*). Similar figure for those in the negative states is 22%, while the figure for unidentified states is 6%.

Conclusions

In general, it has been observed that there has been a positive transition among JPA staff in terms of their reaction towards the implementation of JPA transformation. This is concluded after comparing the findings of this study with the one conducted in August 2013. This is quite obvious even though the scores are not as high as proposed by Jaffe and Scott, even for *exploration* and *commitment*. More detailed examination also shows that for some sub-groups, the transition has been greater. Female staff is shown to be more positive in *denial* compared to their male counterparts. This finding is of special interest because in the last study female staff was shown to be less positive towards the transformation process.

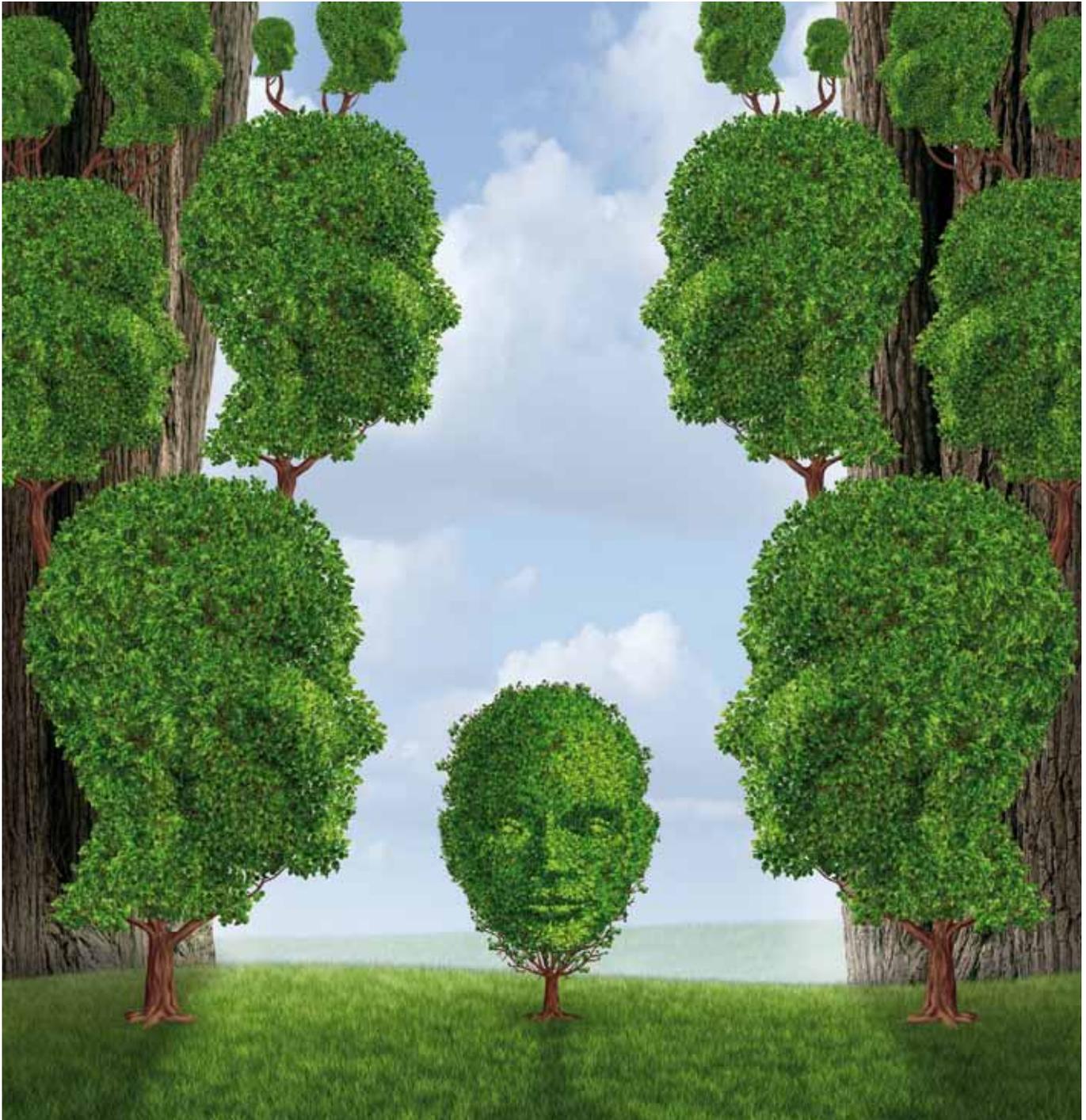
More mature respondents (in terms of age and years and service in JPA) recorded more positive transition compared to younger staff, and this is true for all four phases. This finding is a re-emphasis of the previous study. This study also suggests that the positive transition does not depend solely on the staff's attendance to engagement sessions conducted by any one of the top three. Thus, it may be concluded that the impact seen has been the result of many initiatives at the different levels of the organisation, including the managers in the Bahagian.

Overall, close to three quarters of all JPA staffs seems to be in the positive states of reaction with regards to the implementation of JPA Transformation. The figure for the negative states is 22%. Nevertheless, the management should not take for granted the seemingly large percentage of those who are already in the *exploration* and *commitment* phases. The work to ensure all are aboard should continue, in the form of engagement, information sharing, celebration of success and other key change management programmes.

viewpoints

Going Green

Conventional Practice Made Possible Today





by
LIEW SENG CHOY
liewsc@might.org.my

Every now and then we are aware of the 40 per cent cut of carbon dioxide emission by the year 2020 compared to 2005 level announced by the Prime Minister during the United Nations Climate Change Conference (COP15)¹. General public from the mass could play a role in helping of reducing CO₂ reduction. As high as 3.3 billion metric tonnes of CO₂ were contributed from the change of land used around the world according to 2010 statistic. Global concentration of CO₂ that are currently at the brim closer to 400 part-per-million is worrying². The results from this threshold value would be the disruption of cyclic wind at the artic. Cold wind failed to be confined at the North Pole. It is disastrous because it increases the overall water level of the globe. This weather change also affects the aviation industry. Micro-burst thunderstorm occur more often at any unpredicted location and causes deathly incidents especially to domestic flight plane^{3 4}. In Malaysia, there are time when we were in a position unable to avoid the use of land for country's development in support of the ever increasing human population. A balance between the reductions of CO₂ could be achieved through the improvement of daily life-style of the public. Further reduction of paper use as well as the increase amount of threes over and around our concrete jungle city.

Paperless

Paperless concept introduces a decade ago certainly has changed the world of printing over the years. But nobody can go paperless overnight. Social-economic back then does not allow that to happen. However, the concept does indeed create a new business model.

'Going paperless' creates and initiated various research and development activities to invent and produce gadgets and devices. The most logical step towards paperless would be to go digital. The creativity and innovation to cross the technological barrier faced back then allows today's digital evolution and the creation of the new tool called "phablet", a paper size device reasonably light to be used to replace physical paper today.

On-the-go (OTG) devices, introduced in late 2001, allow data to be accessed or transferred through USB ports.

Going totally paperless in the public service takes time to realize. A minimal amount of paper was always required for important recording purpose. Duplex printing was introduced to help reduce the amount paper used back then. Today, ordinary document for operational purposes could be replaced by phablet or tablet.

Verification of document between office members could be done in many ways. On-the-go (OTG) devices, introduced in late 2001, allow data to be accessed or transferred through USB ports. Presenting a document between and within members of public services could be done by passing a thumb drive with portable device that support OTG specifications. SanDisk Ultra Dual USB Drive is one good example for the purpose. Quick-respond (QR) code which allows passing of information between parties is another innovative creation by

Denso Corporation in Japan. A square thumb size pattern printed onto surface allows simple item identification, document management, as well as general marketing. A QR code could be generated by a screen at service counter for general public to scan for a service ticket number. It prevented the use physical paper for the service provided. A stable yet reliable internet cloud services are required in order to enable the services of smooth data transfer. Periodical copy of e-magazine is encouraged. QR code printed is an example of a link to all available online c-Magazine courtesy of myForesight®, MIGHT.

Enhancement of current internet services would be another field of business opportunity for the country. The major obstacles would be to have more innovative way of displaying digital content at work place. Glass technology that allows digital content to be displayed ubiquitously at work place is still not a main stream technology at the time of printing this article. On the other hand, capacitive sensing technology in electrical engineering still has tremendous space for improvement despite solving palm rejection algorithm hidden underneath the displaying glass. It would certainly reduce the use of paper further once scientists and engineers manage could find a way to take them into the mainstream technology.

Tomorrow's Green Practice starts today

Real green practice at public service thought to have a long way to go in our beloved country is actually not true. Pathway at all corridors around all public services could be used as a tool to reduce carbon footprint. Pathway embedded with genetically modified grass could be designed inside office pathway instead of currently used carpet.

We have enjoyed walking bare foot at workplace without realizing solar-to-fuel source could be explored there. Photosynthesis served as the best example for this sci-fi terminology. Our very own Cilibangi is one great example by our very

¹ http://ww2.utusan.com.my/utusan/special.asp?pr=theMessenger&y=2009&dt=1218&pub=theMessenger&sec=Home_News&pg=hn_09.htm

² <http://co2now.org/>

³ <http://news.discovery.com/earth/weather-extreme-events/can-a-microburst-or-wind-shear-crash-a-plane-130415.htm>

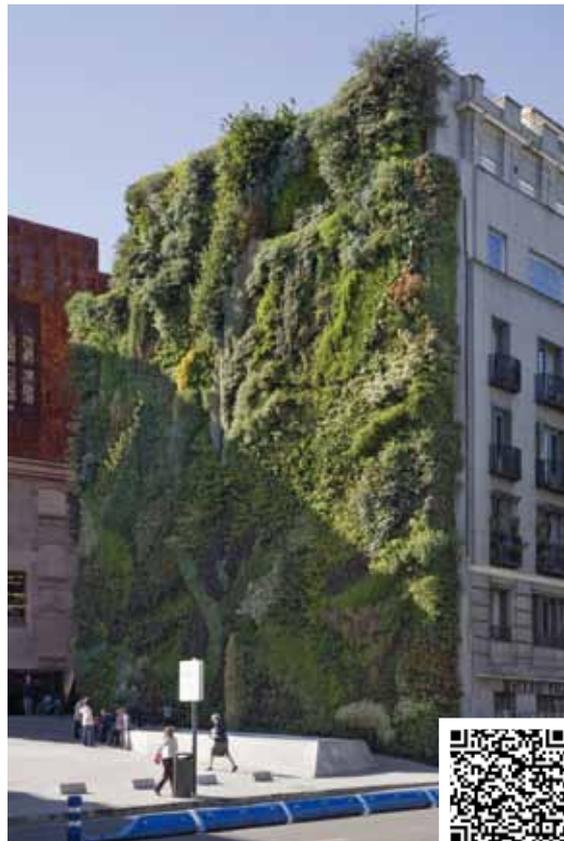
⁴ <http://www.accuweather.com/en/weather-news/us-airways-1016-plane-crash-anniversary-microburst/29531185>

viewpoints

innovative and creative scientist from our home country. Similar methodology could also be applied to create indoor grass used at office's corridor. Genome sequencing technology that belongs to Universiti Kebangsaan Malaysia, UKM, could be used to sequence the DNA of the indoor grass in order to have the same length that works best at office environment and lightning system for photosynthesis process to take place.



The benefits are tremendous. It would first enhances our country Bio-technological sector. Material scientist and engineers would have the opportunity to create new form of material that helps to contain the grass while providing nutrient to the grass root without jeopardizing the overall structure of the floor. New business model would be created through the green path generated at the office. Lightning technology that would help spur the photosynthesis process that will eventually create a complex form of sugar for the plant to be absorbed as food source



Glass technology that allows digital content to be displayed ubiquitously at work place is still not a main stream technology at the time of printing this article.

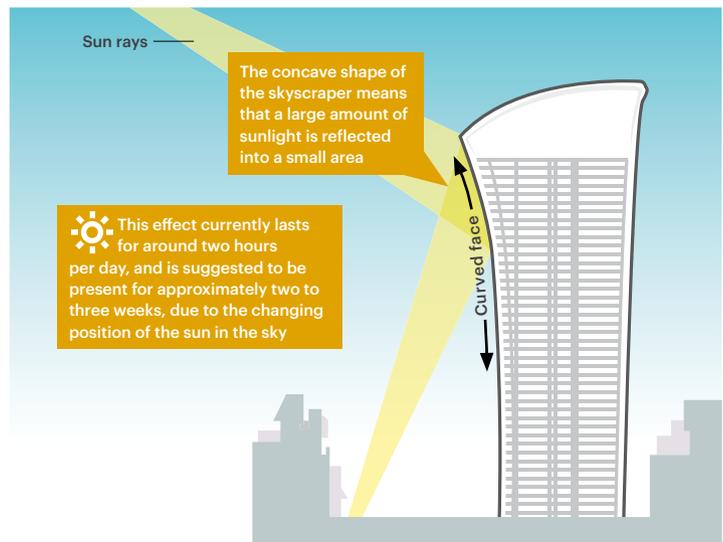
could be developed. The outcome from this movement would fulfill our ambition for solar to fuel technology and reduction of carbon dioxide in the atmosphere. The lighting technology that caters for plant would also be used for indoor farming.

Pasona Group at Tokyo, Japan, is one good example of office farm. Vertical farming technology employed enables a variety of tree and plant to be used to decorate the facade of the buildings around Tokyo. It certainly helps reduce the amount of light reflected through the window. Damage caused by the reflected sunlight from Wilkie-Talkie Building at Eastcheap city of London was an extreme example of the effect reflected sunrays. Reducing the overall ambient temperature and the amount of carbon dioxide in the atmosphere through photosynthesis process of plant is the remedy for climate change, especially around the city area.

Similar vertical farming technology is gaining popularity in Malaysia. Vertical farming could be used at interior as well as exterior walls of buildings of public services.

References

1. <http://en.wikipedia.org/wiki/Phablet>
2. <http://www.google.com/patents/USRE34915> (Paperless System)
3. <http://www.google.com/patents/US5568246> (Duplex Printing)
4. <http://google.com/patents/US5380991> (Paperless Coupon)
5. <http://www.google.com/patents/US5339091> (Portable Book)
6. http://core0.staticworld.net/images/article/2014/02/sandiskultrausbdrive1_gallery-100245944-gallery.png (Image for SanDisk)
7. <http://www.corning.com/advancedglass/index.aspx>
8. http://en.wikipedia.org/wiki/Capacitive_sensing
9. Masaki Watanabe, Toshio Endoh, Morito Shiohara, and Shigeru Sasaki, "Palm vein authentication technology and its application" http://www.ns2.biometrics.org/bc2005/Presentations/Conference/1%20Monday%20September%2019/Poster%20Session/Watanabe_1568964435_BioSymposium_2005.pdf
10. Saharah Moon Chapotin, Jeffery D. Wolt, "Genetically modified crops for the bioeconomy: meeting public and regulatory expectations" *Transgenic Res* (2007) 16:675-688; Springer



Green building design involves finding the balance between homebuilding and sustainable environment.

Ensuring A Security Supply Of Natural Gas For The National Power Generation: Pipeline Maintenance & Operation



by
**MOHD QA HARUDDIN
ABDULLAH**
qaharuddin@might.org.my



**MOHAMAD AZREEN
FIRDAUS ABD AZIZ**
azreen@might.org.my



**SITI NUR FATIMAH
NOODIN**
nurfatimah@might.org.my



viewpoints

Introduction of National Energy Sector (Oil & Gas + Power Generation)

Transportation of natural gas via pipeline system is the most effective method, especially for a long distance transmission. Technically, natural gas is transported from the gas reservoir to the consumer through transmission and distribution pipelines. The transmission and distribution pipeline systems are actually different as the operating pressures and the pipe sizes are different. A transmission pipeline transports the natural gas from the Gas Processing Plant (GPP) to the distribution center and to larger volume customers. This transmission pipeline ends at the city gate station and transports the natural gas within the storage field. A distribution pipeline supplies and distributes the natural gas from the city gate station to the end-users. Normally, the pressure of the natural gas would be reduced and the gas is odorized for safety purpose at the city gate station.

Overview on the Peninsula Gas Utilization (PGU)

Approximately 2583 km of high pressure natural gas transmission pipeline in the Peninsular Malaysia is solely managed by PETRONAS Gas Berhad (PGB). This natural gas transmission pipeline, known as Peninsular Gas Utilisation (PGU), serves as the backbone of Peninsular Malaysia's natural gas supply infrastructure with the pipes ranging from Nominal Pipe Size (NPS) 2 up to the 48. The pipelines are operated and maintained by the operating division, Transmission Operations Division (TOD) of PETRONAS Gas Berhad (PGB). This PGU infrastructure comprises six gas processing plants with a capacity of 2000 million standard cubic feet per day (mmscfd). The handling and maintenance activities of the transmission pipeline are carried out in the stipulated region along the four phases through the Pipeline Integrity Management System (PIMS) programs.

Technically, the natural gas utilized in the National Gas Power Generation is supplied by the PGB through the PGU system which is connected to the Power Generation facilities. Currently, there are 20 major local power generation plants and two located in Singapore – Senoko Energy and Keppel Gas – that receive the natural gas through the PGU system supplied the PGB.

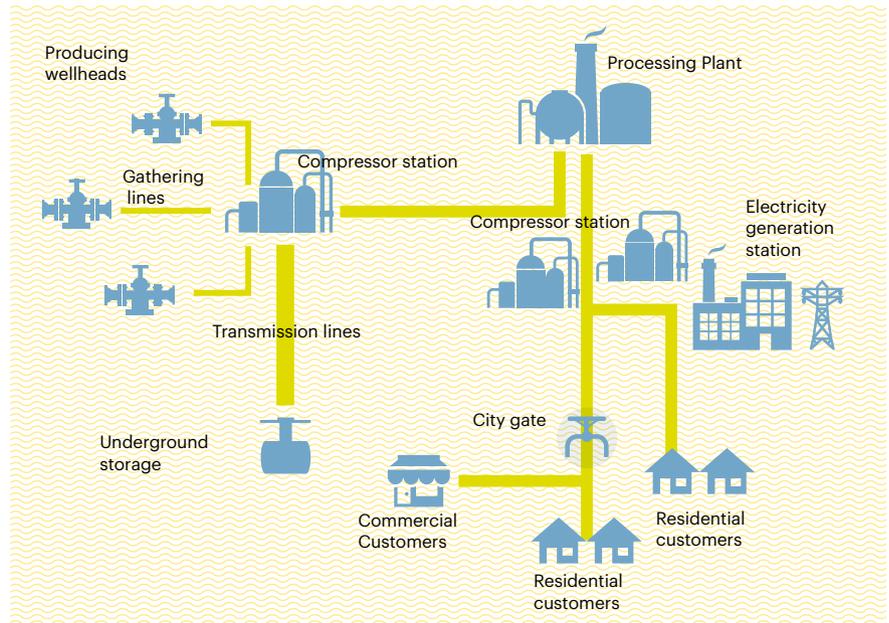


Figure 1: Typical natural gas chain transmission and distribution system (CEPA)



Figure 2: Peninsular Gas Utilisation (PGU) system (PETRONAS Gas Berhad, 2013)

List of National Power Generation (PGB Sales Gas Customers, 2013)

Plant	Plant
1 TNB, Sultan Ismail Power Station (Terengganu)	12 Genting Sanyen Kuala Langat Power Plant (Selangor)
2 YTL, Paka Power Station (Terengganu)	13 TNB Serdang, Putrajaya Power Station (Selangor)
3 TNB, Sultan Iskandar Power Station (Johor)	14 TNB Connaught Bridge Power Station (Selangor)
4 YTL, Pasir Gudang Power Station (Johor)	15 TNB, Kapar (Sultan Salahuddin Abdul Aziz Shah) Power Station (Selangor)
7 Pahlawan Power, Tanjung Kling Power Station (Malacca)	16 Lumut GB3 Power Station (Perak)
8 Panglima Power, Telok Gong Power Station 2 (Malacca)	17 Lumut Power Station (Perak)
9 Powertek, Telok Gong Power Station 1 (Malacca)	18 Prai Power Station (Penang)
10 TNB, Tuanku Jaafar Power Station (Negeri Sembilan)	19 TNB Gelugor Power Station (Penang)
11 Port Dickson Power Station (Negeri Sembilan)	20 Technology Tenaga Perlis Consortium (Perlis)

PGB Total Pipeline Length (In Operation)	
Main	1658 km
Lateral	374 km
C2, C3 and C4	357 km
GPP Interconnect	116 km
Sarawak	45 km
RGT	33 km
Total	2583 km

Complex	GPP	Capacity (mmscfd)
GPK	1	310
	2	250
	3	250
	4	250
GPS	5	500
	6	500
	Total	2060

Corrosion normally occurred on pipes that are made from the carbon steel material due to the presence of Carbon Dioxide (CO₂) and Hydrogen Sulphide (H₂S) in the constituents of natural gas.

The infographic shows the industrial relationship between the oil and gas industry and the national power generation industry. The natural gas transported to the power generation would be used to generate electricity through the combustion process. The amount of electricity generated depends on the features and capability of the power generation infrastructure. Generally, the exhaust gas from the combustion process will drive the turbine which is connected to the generator based on the principle of energy conversion and multiple engineering technologies. Electricity generated in the generator is

transferred to the transformer where the voltage is increased. The electricity is then transmitted to the switchyard and delivered to the communities via the National Grid System.

Ensuring a Security Supply: Pipeline Maintenance & Operation

Pipeline facilities are exposed to the environmental influences and loading factors that could reduce the integrity of the pipes. Furthermore, as the time elapsed, this pipeline aged and become prone to various types of physical flaws such as corrosion, stresses and mechanical damage. These physical flaws may cause leakages that lead to failures of transmission operation as well as the power generation process, production lost and catastrophe destruction which ultimately will cause negative impact towards the environments, health and safety.

It is reported that corrosion is the major factor of the pipeline failure. Based on the statistic of 2008, 23.3 % of natural gas pipeline failures are due to the corrosion. Corrosion normally occurred on pipes that are made from the carbon steel material due to the presence of Carbon Dioxide (CO₂) and Hydrogen Sulphide (H₂S) in the constituents of natural gas. The existence of these hydrate components initiates pipeline internal corrosion such as cavitation, pitting, galvanized, stress cracking corrosion and erosion through the chemical and physical process, and will contribute to the metal loss of the pipeline thus reduces the pipe wall thickness.

Electricity is an important commodity. Defective pipeline may cause the disruption of electricity supply which may lead to hardship to the population, hinder economic activities and paralyze the industrial sector. Continuous supply of electricity is important. Therefore, maintenance of the pipeline system that transports the natural gas – the source of electricity – should be prioritized in the gas supply operation.

Pipeline system maintenance is necessary to ensure good integrity of the pipeline system, prolong the life of the pipeline and to ensure the safety of the natural gas transportation operation. There are various techniques applied in the pipeline maintenance activities such as pipeline pigging, Right-of-way (ROW) and site maintenance, pipeline repair and pipeline segment replacement.

viewpoints

Pipeline pigging is a technical maintenance of the transmission pipelines by the application of the Pig tool propelled through the internal pipeline. Pipeline pigging is operated in every phase of pipeline's life, during the pre-commissioning, commissioning and operation. Operational pigging is implemented on active pipeline to clean up the debris and to inspect the integrity of the pipeline.

State of the Art: Intelligent Pipeline Inspection Gauge (PIG)

A Pig tool that performs advance tasks on monitoring the integrity of the natural gas transmission pipelines during the pigging operation is commonly known as an Intelligent PIG. Basically, Intelligent PIG is referred as In Line Inspection (ILI) tool and it is operated to obtain specific information related to the pipeline integrity. The integrity of the pipeline 'in service' is normally inspected by the Intelligent PIG tool since it is based on the Non Destructive Test (NDT). NDT approach is more preferable for the oil and gas pipeline inspection since this method does not disturb the normal operation of the pipeline. The primary purpose of the Intelligent PIG is to detect the pipeline anomalies and to determine the size of the defects detected on the pipeline. Technically, an Intelligent PIG tool is launched through the natural gas transmission pipeline and it flows along with the product to monitor the integrity of the pipeline.

Technology Foresighting Driven

The design function of Intelligent PIG is more sophisticated as the structure of the PIG device consists of sensors, a battery, electronic components and a recording device which are incorporated and embedded together in a genuine inspection tool. The electrical energy of the electronic system is provided by the battery. The data storage is installed in the Intelligent PIG to record data measurements to be further analyzed after the pigging operation is completed. The function of the odometer wheels is to indicate the distance the device has traveled as well as the location of the defects detected in the transmission pipeline system. The main function of the sensors is to make assessment as the device travels through the natural gas transmission pipeline.

The application of the inspection tool depends on the technology of its sensor.



Figure 3: Pipeline Maintenance: Launching operation of Intelligent PIG into the pipeline system (Nord Stream AG, 2012)



Figure 4: ROCOMBO MFL-A/IEC Intelligent PIG (ROSEN Group, 2013)

Different type of sensors performs different functions on the pipeline inspection. The Intelligent PIG that utilizes the Electromagnetic concept is known as Magnetic Flux Leakage (MFL) PIG and Eddy Current (EC) PIG, whilst the Intelligent PIG that utilizes the ultrasonic concept is named as Electromagnetic Acoustic Transducer (EMAT) PIG and Ultrasonic PIG. An Intelligent PIG that is designed with proper consideration to criteria such as pipeline medium, pipeline features, pipeline characteristics and the goal of the evaluation process, will have high capability to perform the integrity assessment of the transmission pipeline

The primary purpose of the Intelligent PIG is to detect the pipeline anomalies and to determine the size of the defects detected on the pipeline.



Figure 5: Latest technology solution of 20-Inch Speed Control Tool developed by the ROSEN Technology Research Center (RTRC) (ROSEN Group, 2014)



Figure 6: Intelligent Pig developed by the ROMSTAR Research and Development Sdn Bhd (ROMSTAR Group, 2013)

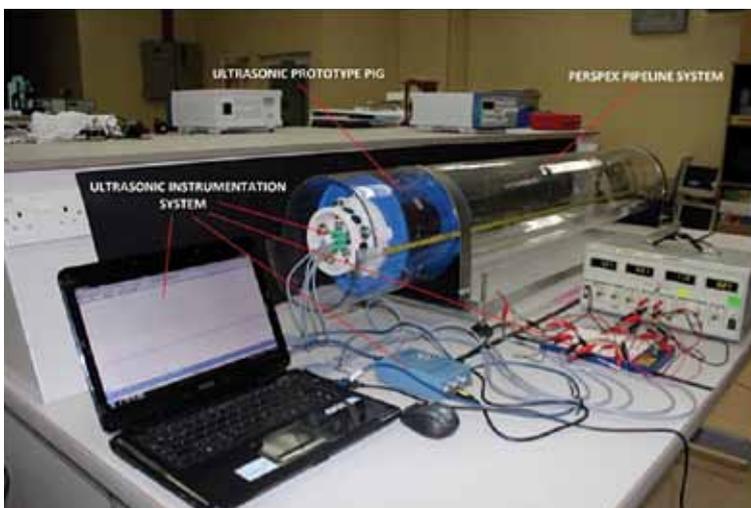


Figure 7: 8-Inch Ultrasonic Prototype Intelligent Pig developed by local researcher from FPREE UTM in AMIR Lab, FKE UTM (UTM, 2013)

Positive growth on the research and development work, specifically on the Non Destructive Test (NDT) application, would enable the development and construction of tools with a wide horizon of inspection capability on the multi-diameter pipeline, challenging subsea

system as well as addressing a security supply of the natural gas.

The application of high technology instrumentation system in the development and construction of the inspection tool with special consideration on microprocessor development, material of device, battery technology, and high sensitivity of the sensor measurement for the robust application and operation in the life natural gas transmission pipeline system is enabled through the extraordinary work and the practical output of research and development.

Spearheading on the Research & Development

It has to be emphasized that, this PGU facilities need to be maintained appropriately according to the technical standards and regulations. Technology optimization of the Intelligent Pig is very essential in order to upgrade the inspection tool to further evaluate the pipelines integrity in a very intelligent algorithm and thus anticipate the potential threats on the national natural gas transmission pipeline system. Significant contributions in the Research and Development work is needed from various parties such as industrial and academia research institution, pipeline operators and services etc. Positive growth on the research and development work, specifically on the Non Destructive Test (NDT) application, would enable the development and construction of tools with a wide horizon of inspection capability on the multi-diameter pipeline, challenging subsea pipeline and high flow rate medium and non-piggable pipeline, thus ensuring a security supply of natural gas for the national power generation.

viewpoints

Sustaining Aerospace Industry Development





From the insight of
SHAMSUL KAMAR
ABU SAMAH
 CEO of Aerospace
 Malaysia Innovation
 Centre (AMIC)

Malaysian aerospace industry has evolved since the launching of the National Aerospace Blueprint in 1997. In 2001 the Malaysian Aerospace Council (MAC), chaired by the Prime Minister, decided that the Malaysian aerospace industry would focus on four areas: (i) aerospace manufacturing; (ii) maintenance, repair and overhaul (MRO); (iii) avionics and system integration; and (iv) aerospace training and education.

To date, Malaysian companies are internationally recognized and play major roles in the global supply chain as the supplier of aircraft parts and components to leading aircraft manufacturer – Airbus and Boeing. They are also the regional MRO service providers to global fleets.

The evolution of aerospace technology has been tremendous and the aerospace industry is now speaking a brand new language of business. It is the language of future generations of aerospace professionals. The potential for future growth is enormous and the advancements have taken the industry to many new levels of opportunities.

Surviving and sustaining the industry

I believe, to move on, we have to enrich the industry through adoption of advanced technologies. We have to accelerate local research and technology (R&T) activities by modernizing our technology and processes; especially in aerospace manufacturing and MRO. Everyone has a role to further drive this industry forward; be it the researchers and scientists who run the research activities, universities that provide research facilities, engineers to advice on the industry's requirement and on-site application, and also businessmen and executives to move the market.

Let us take A320, one of the most popular single aisle aircraft as an example. Here is the scenario: Malaysia is the single-source components supplier for the aircraft spoiler whilst AirAsia Group is the largest customer for the A320 Family. For every sale for A320, Malaysia gets the job to produce the spoiler before it is shipped to United Kingdom to be assembled with the complete wings. In addition, we will also supply the spare parts to the operators or MRO organization to support the operation of the said aircraft type.

Thus, in order to ensure that we retain this 'exclusive business', we need to be innovative in enhancing our manufacturing processes. At the same time, we should not limit our capability by producing the same type of products.

We have made progress. We undertake work packages for more complex part, namely the fan cowl that requires additional competencies to be developed within our industry, and the composite fixed leading-edge wing component - the largest part assemble locally by Spirit AeroSystems Malaysia.

The next target is to participate in the Next Generation Single Aircraft Program for all products that we currently produce. Therefore, we need to expand our technical competencies and capabilities as we anticipated the design of the new advanced generation aircraft will definitely utilizes advanced technology and new materials. In addition, we also need to strengthen our local supply chain to support this initiative. The establishment of Aerospace Malaysia Innovation Centre (AMIC) in 2011 is to ensure that Malaysia will sustain its aerospace business in a long run through R&T.

viewpoints

The aircraft of tomorrow

Future aircraft will utilize more advanced material and technologies and this is a clear hint of change in the future MRO activities. Therefore, we need to look into new technology related to composite repair, analysis, redesign and so on.

More composite materials are likely to be used in the new aircraft. Even today, more than 50% of A350, 30% in A400M and 25% of A380 are composite parts. Utilization of composite materials is among the potential areas being explored by the OEMs to reduce the weight of the aircraft and to increase efficiency that would lead to minimal fuel consumption to address the environment concern.

manufacturing companies to participate in the industry.

MIGHT, together with the relevant stakeholders, is currently formulating a new National Aerospace Blueprint to chart the industry development for the next 15 years. Based on our active involvement throughout the workshops and stakeholders engagement, we at AMIC foresee aerospace R&T will play a major role in ensuring the competitiveness of our aerospace industry at the global level. More quality industry-led research activities on various topics are needed to support the growth of the industry. This will be a great challenge for AMIC and our research partners in delivering innovative technology solutions for the industry.

different from conventional metal repair. Therefore, development and adoption of new technology is critical to sustain the business. At the same time, we need to train workers who understand and have the capability to utilize the new technology.

Another challenge in composite manufacturing and repair is non-destructive testing (NDT). This test is defined as a process to evaluate the properties of a material, component or system without causing damage. At the moment we have low availability of competent workforce in this area.

Another area that needs our attention is fly-by-wire technology – the electrical, electronics and integrated aircraft system.

Hundreds of local aerospace manufacturing professionals are currently working in the Middle East, and the number is increasing.



In order to support the global OEM's vision, our supply chain should have a stronger growth structure. The first aerospace blueprint, introduced in 1997, has mapped the local industry development through various initiatives up to 2015. But, what will happen beyond 2015?

Currently, there are a number of initiatives such as the strategy to prepare Malaysia to participate in the Next Generation Aircraft Program, industry-led R&T through public-private partnership that is implemented by AMIC, and developing future design engineers through LEADER Aerospace program to cater for the future of Malaysia's aerospace manufacturing's need. However, more activities need to be developed in the MRO in relation to engine maintenance and modification, composite repair and remanufacturing activities. It is also important to encourage more

Challenges ahead

Malaysia is the industry champion for aero-structure manufacturing in the region. However, we are utilizing the same old technology and materials to produce aircraft's panels although the usage of composite parts and components is being highly recommended and promoted as it reduces weight and increases durability. Therefore, if we want to remain as champion and stay ahead of our competitors, we need to invest on modernizing our processes that may include acquisition of advanced technology.

We are also the regional industry leader for aerospace MRO. To stay ahead of our competitors we have to be abreast with the latest technology. That means composite manufacturing, and composite repair will always be a big challenge as it is far

An example of technology advancement in this area is the display panel in the cockpit which has been replaced by touch screen panel. The problems would be more complicated and the repair needs different approach, knowledge and expertise.

Aerospace business requires low turnaround time. It is of utmost important to ensure task, especially receiving, completing, and returning an assignment, is completed early and within scheduled time. A simple example is the low cost carrier (LCC); the more they fly, the more profit they make therefore, they cannot afford and tolerate any delay at any part of their operation.

Customers' demand in aerospace MRO business is undoubtedly high. Whenever an aircraft is sent to the hangar or workshop for service, repairs are expected to be done immediately. To meet this

expectation, skilled workers, technology and relevant test equipment as well as ready supply of spare parts are mandatory. Therefore, to sustain our competitiveness in the industry, training of skilled workforce, development of technology, and availability of equipment and parts should be prioritized.

Development of indigenous aerospace product

As in any other industry, users usually prefer proven high quality products. Therefore, locally produced or indigenous aerospace product must be of equal or higher quality for it to be competitive in the international market. Developing indigenous aerospace products need to take into account various

innovative manufacturing process, tool design & manufacturing, advanced testing & certification, virtual reality, sustainable aviation fuel and bio-sourced material. Apart from being guided by the industrial lead members on future direction of the global industry, AMIC provides a platform to expose Malaysian scientists to global level Research and Technology (R&T) activities.

We have to be sensitive on the threat from our competitors, be it from the regional countries or the European and North African countries. These countries are also preparing themselves to play significant roles in the future aerospace arena. The United Kingdom (UK), for instance, is looking to expand its aerospace

better known as basic technology research. In order to bring our R&T activities to higher TRL (4-6) we need industrial lab facilities with a strong participation from both the Industries and Research Institutes.

From human to robot

Malaysian workforce in the aerospace industry, in manufacturing as well as MRO, is marketable worldwide. They are being offered with attractive packages if they are willing to work abroad. Hundreds of local aerospace manufacturing professionals are currently working in the Middle East, and the number is increasing. This does not include the number of pilots and aircraft engineers working elsewhere. This situation, if allowed to continue unchecked,



We need to identify what are the areas that we need to improve, evaluating new technologies relevant to our vision and developing plans to elevate our technical workforce to a higher level.

external aspects such as assistance and services of highly competence experts, and long term technical support through upgrading and modification of equipment.

Having locally produced advanced aerospace products is definitely good for our aerospace industry as it would reduce our dependence on supply from other countries and it would make us more competitive in the global market.

Aerospace technology is developing and evolving fast. We have to keep pace with the development and evolution in order to retain or competitive edge in the global market. We need to identify what are the areas that we need to improve, evaluating new technologies relevant to our vision and developing plans to elevate our technical workforce to a higher level.

At AMIC, our research themes are

manufacturing business. The Catapult Program is the manifestation of the UK government to utilize research and development (R&D), including aerospace, to generate economic growth. A number of industry-led research centers are being established in partnership with the industry and universities such as National Composites Centre (NCC), Advanced Manufacturing Research Centre (AMRC) and Manufacturing Technology Centre (MTC).

There are things we can learn from the UK. For instance, MTC was built as a factory by itself, fully equipped with advanced equipment with different competencies for various development activities, testing products and many others – a one stop center - whilst in Malaysia, we are still depending on university's capabilities and infrastructures which are still focusing on low Technology Readiness Level (TRL) or

would create brain drain in our aerospace industry.

Rather than stopping our workers from accepting employment in other countries, I would suggest training more skilled workers to cater for the needs of our industry. The effort should focus on training workers with skills for the current technology to cater the current needs as well as equipping them with new skill set for future needs.

Automation is the future of aerospace industry. Therefore, we also need workers with computer programming knowledge, skills and experience.

Industrial lab development

The technology readiness levels (TRL) are measures used to gauge the maturity of evolving technologies during their development or during early operations.

viewpoints

Most research facilities available in the country are on the TRL 1 up to TRL 3 as they are concentrated in universities research labs and focusing on the basic technology research and research to prove feasibility. In most cases, these research materials and results would be sent to the applied research labs or the common labs such as offered by MIMOS and SIRIM for verification.

AMIC is tasked with the function to fulfil the need to focus on higher TRL (4-6) activities in technology development and demonstration; providing long term solutions to industry problems, and to enhance current technical competencies by adopting advanced technologies. As part of its long term plan, AMIC, in collaboration with M-Aerotech under the Asia Aerospace City (AAC) initiative, has established its industrial lab located in German-Malaysian Institute (GMI) and aims to move to its main industrial lab to AAC Subang by 2017.

At AAC, AMIC will be looking into various activities for advanced testing of aerospace products including the development and production of virtual reality system as well as robotic system to support the aerospace manufacturing activities. Earlier in 2014, AMIC, in collaboration with Airbus, Universiti Putra Malaysia, MIGHT, BioTech Corp and CIRAD (a French research center), established a Centre of Excellence (COE) to conduct a study related to the production of sustainable jet fuels in Malaysia.

Living the Smart-Partnership spirit

To implement the aerospace industry development initiatives effectively, it is necessary to leverage and further expand on the smart public-private partnership approach. In this respect, AMIC is taking the lead of industry-led aerospace R&T development through consultation with its industrial lead members, namely Airbus Group, Rolls-Royce and CTRM.

In this collaboration, AMIC addresses the need for industrial labs that are missing in our research structure whilst the industrial lead members share their expectations on the future of the industry. Subsequently, the team discusses the formula to escalate industry's competitiveness through R&T and initiatives to alleviate our researchers' capability to undertake projects at the global level.

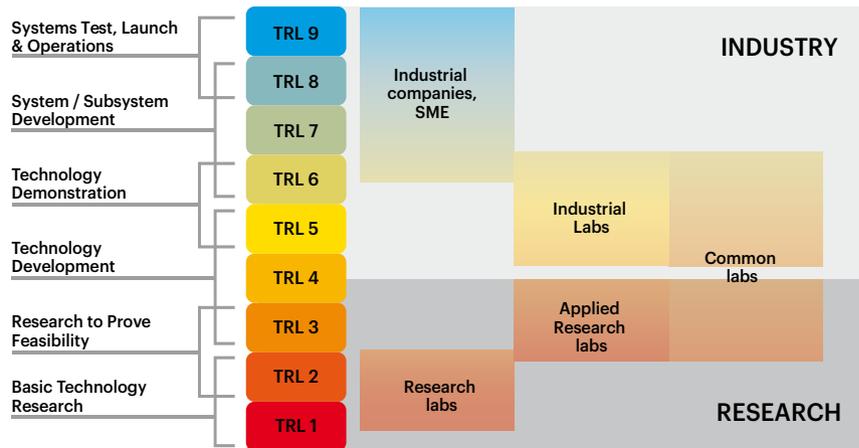


Figure 1: The Technology Readiness Level

The partnership between AMIC and M-Aerotech undertakes to develop R&T capability within AAC as well as to further strengthen the nation's human capital capacity in aerospace manufacturing industry. M-Aerotech will be focusing on the World Class Tailor Made Infrastructure providing areas for engineering services, design, stress analysis; and Professional Development to cater for the continuous development of human capital, whilst AMIC will take the lead in the Industrial R&T. The establishment of AAC is expected to be accessible and beneficial to the local and global aerospace communities.

Leveraging on our technical network, we plan to bring local and international experts - Airbus Group, Universiti Malaya (UM), M-Aerotech, STRAND Aerospace and University of Nottingham Malaysia Campus (UNMC) - to AAC.

The process of engagement with the aerospace experts has already being executed through the signing of Memorandum of Understandings (MoUs) between AMIC with its partners. One of the collaborative MoU was signed during the Farnborough Airshow 2014 between AMIC, AAC and University of Nottingham (UoN). In this partnership, AAC will provide a suitable research lab, while UoN/UNMC will provide and transfer sets equipment to the center and conduct related research projects in collaboration with AMIC. AMIC will coordinate the research collaboration between the industry players and the Research Institutes.

The future

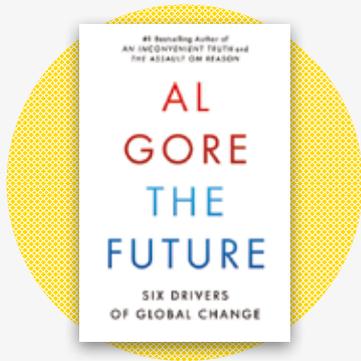
Let's challenge ourselves to do more complex work packages, explore new technologies, develop new sustainable materials, and adopt advanced processes in our manufacturing and MRO activities.

The main ingredients to sustain the aerospace industry will be the focus on industry-led R&T activities. However, R&T need to be complemented with the right infrastructure and highly competent workforce.

The future is NOW! Hence, we need to quickly accelerate the development of our technical competencies as well as our industrial lab infrastructure.

Scientists and researchers around the world are now working around the clock in developing future aircraft design, cutting edge technology and alternative advanced materials. We must be ready with the right competencies to take on the new tasks and challenges when all of these elements are being introduced to remain competitive globally.

Close collaborations and smart partnerships between the industry players, universities and research institutes are the key success factors to develop a vibrant ecosystem for Malaysian aerospace industry. It is expected that the ties between the respective parties will become stronger so that we could become a world class aerospace research community.



**THE FUTURE:
SIX DRIVERS OF
GLOBAL CHANGE**

Author: Al Gore
Publisher: Random House
Trade Paperbacks
ISBN-10: 0812982894
ISBN-13: 978-0812982893

In *The Future*, Gore identifies the emerging forces that are reshaping our world:

- **Ever-increasing economic globalization** has led to the emergence of what he labels “Earth Inc.”
- **The worldwide digital communications**, Internet, and computer revolutions have led to the emergence of “the Global Mind,” which links the thoughts and feelings of billions of people and connects intelligent machines, robots, ubiquitous sensors, and databases.
- **The balance of global political, economic, and military power is shifting** more profoundly than at any time in the last five hundred years—from a U.S.-centered system to one with multiple emerging centers of power, from nation-states to private actors, and from political systems to markets.
- **A deeply flawed economic compass** is leading us to unsustainable growth in consumption, pollution flows, and depletion of the planet’s strategic resources of topsoil, freshwater, and living species.
- **Genomic, biotechnology, neuroscience, and life sciences revolutions** are radically transforming the fields of medicine, agriculture, and molecular science—and are putting control of evolution in human hands.
- **There has been a radical disruption of the relationship between human beings and the earth’s ecosystems**, along with the beginning of a revolutionary transformation of energy systems, agriculture, transportation, and construction worldwide.

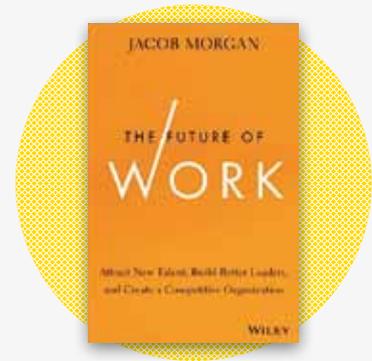


**THIS CHANGES
EVERYTHING:
CAPITALISM VS.
THE CLIMATE**

Author: Naomi Klein
Publisher: Simon & Schuster
ISBN-10: 1451697384
ISBN-13: 978-1451697384

Forget everything you think you know about global warming. It’s not about carbon - it’s about capitalism. The good news is that we can seize this existential crisis to transform our failed economic system and build something radically better. You have been told the market will save us, when in fact the addiction to profit and growth is digging us in deeper every day. You have been told it’s impossible to get off fossil fuels when in fact we know exactly how to do it - it just requires breaking every rule in the “free-market” playbook: reining in corporate power, rebuilding local economies and reclaiming our democracies. You have also been told that humanity is too greedy and selfish to rise to this challenge. In fact, all around the world, the fight back for the next economy is already succeeding in ways both surprising and inspiring. Climate change, Klein argues, is a civilizational wake-up call, a powerful message delivered in the language of fires, floods, storms, and droughts. Confronting it is no longer about changing the light bulbs. It’s about changing the world - before the world changes so drastically that no one is safe.

Either we leap - or we sink.



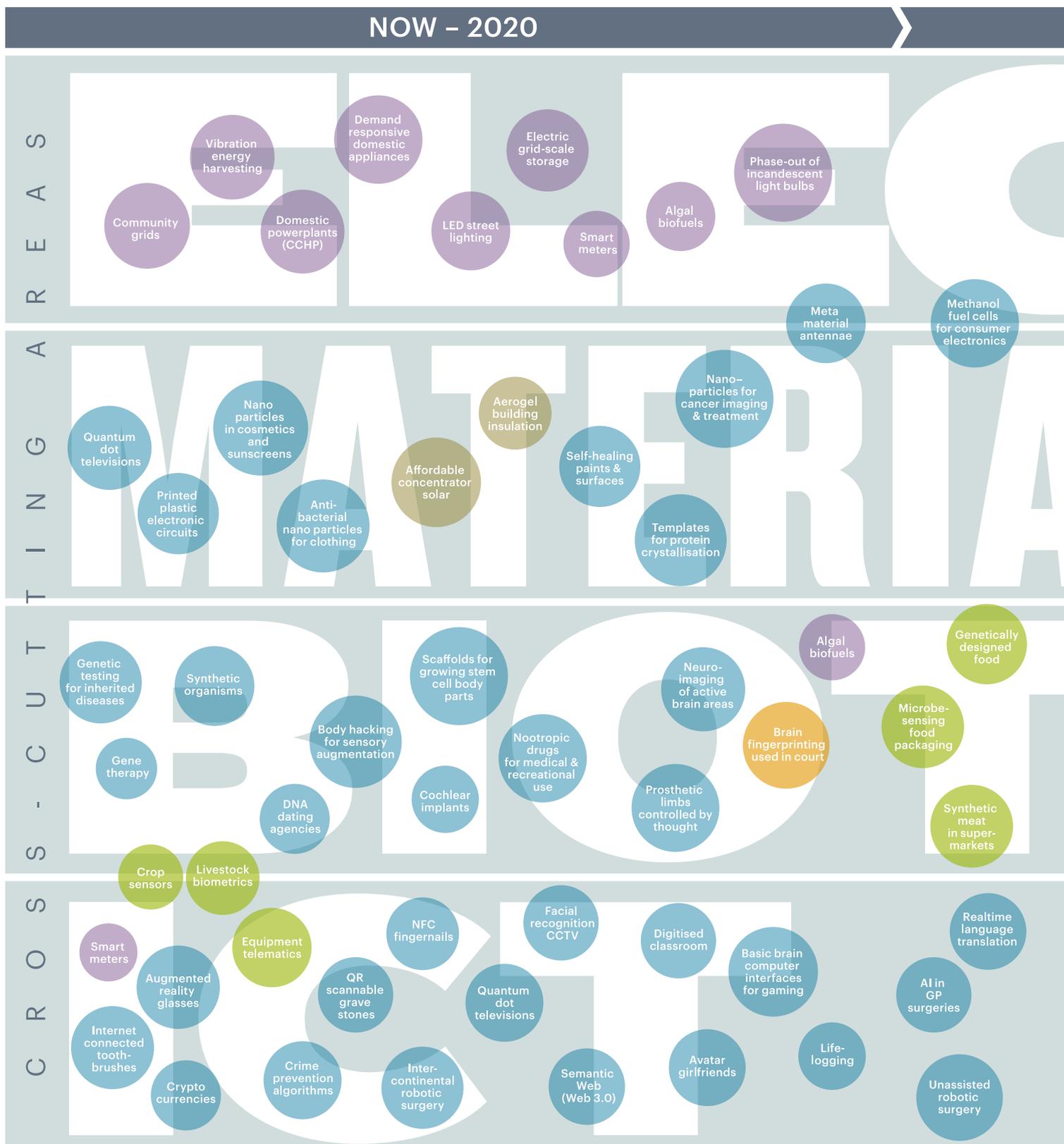
**THE FUTURE OF WORK:
ATTRACT NEW TALENT,
BUILD BETTER LEADERS,
AND CREATE A COMPETITIVE
ORGANIZATION**

Author: Jacob Morgan
Publisher: Wiley
ISBN-10: 1118877241
ISBN-13: 978-1118877241

By now, it’s old news that Millennials are entering the workforce in droves. It’s old news that mobile work is gaining speed, and it’s old news—even ancient news, by today’s standards—that employment and management is fundamentally changing. The problem is that many of us still don’t know what the future of work really looks like. Without a big-picture perspective on what the next few years hold for employees, managers, and organizations, how can we really understand how to adapt? We know we need to change and challenge convention but that’s like having an address without a map. Finally, Jacob Morgan has provided the map. *The Future of Work* fills in the gaps in our understanding of what’s next for the workplace. This is not a distant-future perspective, but rather focuses on the near term, clearing the fog for employers and employees alike. With new technologies at our disposal and the light-speed pace of communications, we can expect things to change very rapidly. Keeping up with and taking control of those changes depends on an understanding of why work, as we know it, is fundamentally dead and where work is going next.

Technology Timeline 2050:

Heard about the haptic clothing? Can't wait for artificial muscle to be in stores? When will these materialized? Next 10 – 20 years? These infographic maps the predicted future technologies, from the thinker's, scientist's and expert's point of view, and harmonizes them with the areas identified in the National Technology Foresight up to 2050.



2020 – 2030

2030

R

- Scrunchable screens and devices
- Nanotubes for synthetic neurons and neural implants
- 3D Printed drugs
- Large scale carbon capture & storage
- 3D Printed drugs
- Feather-weight super composites
- 3D-printed soil for vertical agriculture
- Ultra-capacitor vehicles
- Motorway lanes for autonomous vehicles

L S C

- Graphene super-capacitors
- Quantum dot night vision windows
- Fully plastic transistors
- Room temperature super-conductors
- Polaratronics enables computing near speed of light
- Graphene super-capacitors
- Wave disc engine for vehicles
- Commercial ocean thermal energy conversion

A M A

- Personalised microbiome therapy
- 3D printed bio-nano scaffolds
- Bioluminescent household lighting
- Ubiquitous bio-sensing
- Tissue regeneration
- In vitro meat
- Stem cell treatment for Parkinson's disease
- Complex organ replacements grown from stem cells
- Synthetic blood
- Hybrid assisted limbs
- Stem cell treatment
- Spun nanotubefibre
- Tattooed circuits
- synthetic neurons & neural implants
- Genetically engineered "super" bananas
- Animal-free leather
- Analytical wearable
- Over the counter genome test
- A cure for malaria
- DNA-based data storage
- GM mosquitos
- Cloned human being
- Pandemic by synthetic organism
- Dream imaging and recording via fMRI

- Autonomous electric taxi fleets
- Haptic clothing
- Insect-sized surveillance robots
- Eye-tracking in mobile phones
- Artificial retina implants
- Lip-reading CCTV
- Battery-free wireless communications
- Holographic data storage
- Intention decoding algorithms
- Adaptive electronic assistant to prevent information-overload
- 3D Printed drugs
- AI in autonomous drone-drone combat
- Mood-sensing machines
- Quantum computers for crypto-cracking
- Smartdust sensor networks
- Fully autonomous battlefield robots
- Machines gain statistical intuition
- High-speed pedestrian walkways
- Optical computing
- Warfare merges with gaming

Focus Areas

- Advanced Manufacturing
- Food Security
- Future Energy
- Social, Medical & Healthcare
- National Security & Domestic Safety
- Plantation Crops
- Environmental Management
- Transportation
- Water Security

2030 – 2040

2040 – 2050

MOTORS

- In-road inductive charging for EV
- Tokomak nuclear fusion for power generation
- Precision agriculture
- Satellite-beamed space solar-power
- Agricultural robots

MOTTECH

- Thorium reactors
- Fuel-cell powered light passenger aircraft
- Artificial muscles
- Iron-fertilisation of oceans
- Self-repaired road
- Travelling wave nuclear reactors
- Quantum computers used for material design
- Artificial muscle

- Brain-computer interfaces
- Neuro-prosthetics
- Bio-electronics drugs
- Synthetic biology
- Anti aging stem cell treatment
- Sensory augmentation
- Augmented hearing
- Gene therapy
- Brain finger printing
- Vertical farming
- Synthetic and artificial organs
- Digital cash embedded in human body
- 3D printed organs
- Closed ecological systems
- Fully body simulation

- Hyper loop mass transit systems
- Ecocortex Immersive virtual reality
- A new generation of military helicopters
- War forecasting algorithms
- Single global E-currency
- Virtual/Physical studios
- Mindreading technology for security purpose
- Hyper-fast crime scene analysis
- Room temperature super-conductors

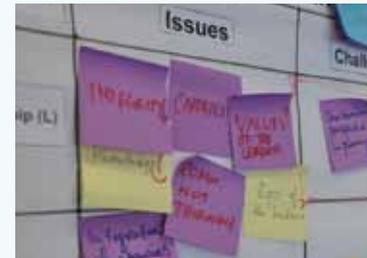
happenings

Knowledge sharing session in INTAN – “Foresight & Risk Management”

14 OCTOBER

The global environment are becoming increasingly volatile, hence risk assessment and scenario building tools are significant in most government and business operation. Strategic foresight and risk management best practices will be a good tool to assist us in making impactful and sustainable decisions.

In collaboration with INTAN, myForesight® shared their knowledge on Foresight & Scenario Planning in Managing Risk.



Stakeholder Briefing on Aerospace Industry Blueprint 2015-2030

4 NOV

Today, more than 150 local and international organizations are actively contributing to the growth of the Malaysian aerospace businesses. The previously launched National Aerospace Blueprint is due in 2015 and there is a need to plan the way forward for the industry to grow in the next 10 years.

MIGHT together with various stakeholders comprises of the aerospace industry, regulatory agencies, education and training providers as well as related government agencies, government and research institutes has gone through seven stakeholders' engagement throughout this year. Situational Analysis (Issues & Challenges and Trends) are used as the framework of the blueprint methodology. The Aerospace Industry Blueprint 2015-2030 is expected to be launched during the opening of Langkawi International Maritime and Aerospace exhibition (LIMA) 2015.

Scenario Building Workshop on Future of Malaysian Public Service

20 NOV

The study on the Future of Malaysian Public Service is currently entering the 2nd last phase of its milestone. The recently held Scenario Building Workshop held on 20th November with attendance from selected stakeholders from the government bodies, academia and also representatives from the industries. The study aims to support the national agenda on Public Service Transformation. The outcomes of the initiative will shape the strategic outlook

and policy direction of Malaysian Public Service 2020 and beyond.

The session have enlisted the drivers of change that will impact the public service as a whole in the future. A few more sessions will be added to this workshop series to gain more input from wider perspectives. Should you interested to take part in our discussion, feel free to drop us an email at ForesightInternal@might.org.my.

myForesight® 2nd Governing Board Meeting

4 DEC

myForesight® 2nd Governing Board meeting last 4th December was convened to provide its members with myForesight® yearly activities and initiatives. Taking advantage from the

full attendance of its members and also selected special guests, a special discussion on the Future of Public Service was conducted to gauge their insights to our preliminary research study. The study highlighted concerns on the scenarios that described the future of public service in the year 2030 and proposed useful parameters to be taken into account in effectively carried out the study output.

Knowledge Sharing Session on Technology Roadmap for the Future: OTEC and Hydrogen in UTM, KL

11 DEC

Scientific theory has revealed that any area with temperature difference over 22°C has the potential to generate renewable energy. One of the related technology that involved in thermal difference is called OTEC or Ocean Thermal Energy Conversion.

On 11th December, myForesight® in collaboration with UTM Ocean Thermal Energy Center along with other expert panels shared knowledge on Foresight and its application during the Short Course on Ocean Thermal Energy Conversion (OTEC) - Global Energy, Renewable and Non-Renewable, in Perspective: Ocean Thermal Energy-Driven Development for Sustainability. Foresight methodology was put to test at the afternoon session with intense discussion from the audiences in finding the key priority focus area according to its importance for OTEC.

Foresight Club in UTHM, Johor

17 DEC

The Foresight Club in UTHM is now venturing into its second cycle. This programme is a continuation of the collaboration between myForesight® and UTHM in promoting and mainstreaming Foresight among the youth and preparing a future-minded students.

The final presentation by the PSM II students of Department of Technology and Management, Faculty of Technology Management and Business was held on the 17 December. All 20 seminar papers were presented with close joint supervised from myForesight® and UTHM professors. The success of this Foresight Club in UTHM has encourage myForesight® to replicate the same module and establish a new nodes of Foresight Club in other higher institutions. Want to have ForesightClub at your place? Feel free to drop us an email at ForesightInternal@might.org.my.



MIGHTy Kidz Day: Spread the love campaign – Love the elderly, Love the Nature

20 DEC

Spread the Love Campaign – Love the Elderly, Love the Nature was signified as the final activity in 2014 for the young MIGHTians. The rising of elderly population, changing families and decreasing quality of nature are among issues we need to look into. Thus, this campaign was to celebrate the elderly at the Darul Insyirah, Bangi and to show them our responsibility as the society. It is also as a platform to educate the young MIGHTians on the topic of love, care and respect not just to the elderly but also towards the environment. In the effort to create a more sustainable living ecosystem, the 3 main elements - the elderly, the young and environment are being

combined as the metaphor of love that signifies the importance of the campaign.

Many bonding activities were conducted such as a story telling session by the Bonda, traditional games like *batu Seremban* and *lawan guli*; and also the tree planting and gardening session. MIGHT through Club MIGHT contribute RM5000 to Darul Insyirah, the non-profit organisation managed by NGO. Utusan Malaysian and Karangkraf also contributed reading materials for the elderly to enjoy. The half a day programme marked as a beginning to a continuous support from MIGHT.



IMPROVE YOUR STRATEGIC FORESIGHT WITH THE SCHOOL OF INTERNATIONAL FUTURES



There is a growing need for long-term thinking and Strategic foresight in the international policy and business community. The School of International Futures can help you to identify and address future challenges and risks through our foresight retreats, consulting and training.

What is the School of International Futures?

SOIF is an independent, not-for-profit organisation based in the UK but operating around the world. We give policy officials, business leaders, analysts and activists the tools and techniques to become better commissioners and users of strategic foresight.

Through our Strategic foresight retreats, and far-reaching network including leaders from governments and the private sector, we have established ourselves as a reference for Strategic foresight in the field of international affairs.

Our retreats provide a platform for learning, discussion and networking, while bespoke foresight training and consultancy can position you to take advantage of new opportunities while protecting you against shocks and surprises.

SOIF Retreats

At SOIF retreats you join a global network of foresight professionals who imagine the future together. You receive advice and insights from world experts who have already used foresight to make a difference in the world, you learn the SOIF Four-stage foresight process and you gain the skills to plan a future of prosperity, security and wellbeing for your organisation.

Mixing with representatives of foreign ministries, international institutions, think tanks and leading corporations, you will share perspectives and ways of thinking about the future, while building relationships in an atmosphere of openness and collaboration.

JOIN US THIS AUGUST FOR SOIF 2015

Building on the success of our 2014 events, SOIF will run its fourth annual retreat on the theme of strategic foresight in the UK from 11 to 14 August 2015. To find out more email info@soif.org.uk

What's covered

SOIF brings together a range of foresight techniques into its Four Stage process, a systematic approach to adapting your strategy and business plans to change in the external environment. We provide:

- Training in foresight tools, including drivers of change, scenario development, backcasting and windtunnelling
- Lectures, keynote and panel discussions on the use of foresight in policy-making
- Dynamic learning sessions with world-renowned experts and thought-leaders
- Practical experience: application of tools and methods to a challenge proposed by a partner organisation



By attending you will

- Enhance your foresight skills and learn to think differently and confidently about the future
- Better understand the future consequences of trends and shocks for the success or failure of decisions you make today
- Learn scenario techniques and tools to understand, prepare for and shape the future of your organisation
- Become part of SOIF's global network

Who should attend?

SOIF retreats offer unparalleled insight and experience, whether you are the horizon scanning lead for your government or enterprise, head up a strategy unit, lead your organisation's risk audit or global trends study, or are setting up an inhouse foresight unit.

Each retreat has drawn participants from over 14 countries, from governments, NGOs, consultancies, and multinational organisations, resources and businesses.

Participant feedback

"Perfectly calibrated course. Quality, excellent. Some great speakers. Practical tools and practical suggestions"

UNITED NATIONS DEVELOPMENT PROGRAMME

"Excellent networking potential; intensive learning experience; high-level expert conversations."

BUREAU OF EUROPEAN POLICY ADVISORS,
EUROPEAN COMMISSION

With the world becoming ever more unpredictable, it's important there is a place that teaches strategic foresight and planning. The School of International Futures is a treasure that anybody interested in managing for the future should not miss.

Mathew J Burrows Director, Strategic Foresight Initiative at the Atlantic Council

SOIF Consulting

Working with SOIF gives you access to advice and expertise whenever you need it, and can help you to analyse and understand the implications of particular themes and issues that are coming up on your radar.

We can help you:

- Scan your strategic horizon
- Analyse and address upcoming issues
- Assess and strengthen your Strategic foresight capability
- Create a real-world impact

We can support you by:

- Auditing your Strategic foresight capacity, and identifying where it can be improved
- Building your foresight skills from board to operations level
- Enhancing the horizon scanning capability of your analytical and research teams

Our services include:

- Creating a speaker programme and facilitating syndicate sessions on a foresight theme
- Hosting sectoral or regional conferences on strategic foresight, from 1 day to 3-day duration
- Custom events that enhance your reputation as a forward-looking organisation

SOIF Training

We offer a range of training options to suit your needs, including:

- 2-day, 3-day or 5-day training courses geared to the context and needs of your organisation
- Half- or full-day strategy sessions for your board of senior management
- Programmes combining training by our faculty with talks by speakers who have successfully introduced foresight into their organisation

For further information please contact
info@soif.org.uk @SOIFutures
www.soif.org.uk

MAP THE FUTURE

As a strategic policymaker or stakeholder, you can help map out a desired future for Malaysia.

This is an invitation by myForesight® to build a collective future. Do you find this magazine thought-provoking? Do you think we could have done better? Perhaps you would like us to cover a specific angle in the study of Foresight.

Or maybe, you would like to contribute articles to the myForesight magazine? Send your feedback and articles to foresightinternal@might.org.my.

Website: www.myforesight.my.

We look forward to hearing from you.

myForesight® team

