INDUSTRIALIZED BUILDING SYSTEM: THE GOVERNMENT'S EFFORT AND CONTRACTORS' RESPONSE

BY

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ABSTRACT

The main problem for construction industry in Malaysia is the late delivery of projects. Due to late delivery of projects, the Government has introduced various strategies to ensure the delivery of projects right on time, as stipulated in the construction contracts. For projects worth more than RM10 millions, the Government has imposed the use of Industrialized Building System (IBS). Although, the Government has done a lot of promotions and efforts towards encouraging the use of IBS system, however, the contractors' response towards it is vital to improve the future of our construction industry. This research is carried out by circulating sets of questionnaires to contractors who are registered with Construction Industry Development Board (CIDB). The focus is given to Grade G7 contractors because they are entitled to bid for work starting RM10 million and above. Secondary data is collected from IBS Centre and through some reading from industry publications such as ICU Weekly Performance Report, IBS Digest and others. Some of the data related to IBS system is collected through communications with industry experts and professionals. Most of the respondents are Bumiputra. They have undertaken three (3) or less IBS projects. Almost 90 percent of completed projects come from public sector development plans. From the survey, it is found that 71.3 percent preferred the use of pre-cast concrete system followed by pre-fabricated timber system with 13.9 percent. Only 47.8 percent of projects complied with the minimum requirement IBS score of 70 points and above. 65.2 percent of respondents did not know about Treasury Circular imposing the use of IBS system. 71.3 percent agreed that through their experience, the use of IBS system was moderate. However, most of the respondents agreed that IBS method will succeed in the future between the year 2016 to 2020.

خلاصة البحث

إن المشكل الأساسي للصناعة البنائية في ماليزيا هو التأخر في إنهاء المشاريع، لذلك فقد قامت الحكومة بإصدار عدة استراتيجيات التي من شأنها أن تضمن إنهاء المشاريع في الآجال المنصوص عليها في عقد البناء. فقد فرضت الحكومة الماليزية استعمال نظام البناء المُصنع لكل المشاريع التي تقدر قيمتها بأكثر من 10 ملايين رنجت ماليزي، وفي سبيل تشجيع استعمال هذا النظام، فقد بذلت الحكومة الكثير من المجهودات والإشهارات. لكن استجابة المتعاقدين لذلك تعد أمرا حاسما لأجل تحسين مستقبل صناعتنا البنائية. سيتمحور هذا البحث على توزيع استمارات على المتعاقدين المسجلين تحت مجلس تطوير الصناعة البنائية، علما بأن هذا البحث قد ركز على المتعاقدين ذووا الدرجة السابعة، حيث أنه يُتطلب منهم أن يعرضوا مشاريع ذات قيمة 10 ملايين رنجت ماليزي فما فوق. وقد قمت شخصيا بجمع معلومات ثانوية من مركز نظام البناء المُصنع (IBS)، بالإضافة إلى قراءات من تقارير الأداء الأسبوعية لوحدة تنسيق تجسيد المشاريع (ICU)، بينما قمت بجمع بعض المعلومات الأخرى التي تتعلق بنظام البناء المُصنع بواسطة بعض الزملاء. وقد كان أغلب أفراد العينة من السكان الأصليين الماليزيين، الذين قد قاموا بثلاثة مشاريع لنظام البناء المُصنع أو أقل. تمثل مشاريع القطاع العام نسبة 90% من مجمل المشاريع. يفضل 71.3% من المتعاقدين استعمال نظام الخرسانة المسبقة الصنع، كما يمثل أولئك الذين يفضلون نظام الأخشاب المصنعة نسبة 13.9%. وقد اتضح بأنه هناك نسبة 47% فقط من المشاريع التي استجابت للمستوى الأدنى لمتطلبات نظام البناء المُصنع لأجل الحصول على 70 نقطة. يمثل أفراد العينة الذين ليس لديهم علم عن المنشور الدوري للخزينة والذي يفرض استعمال نظام البناء المُصنع نسبة 65.2%. كما وافقت نسبة 71.3% منهم على أن استعمال نظام البناء المُصنع –على حسب خبرتهم– يعتبر متوسطا. ومع ذلك فإن أغلب أفراد العينة وافقوا على أن طريقة نظام البناء المُصنع ستكلل بالنجاح مابين سنة 2016 و2020.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Business Administration (Construction Business)

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Maisarah Ali
Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Business Administration (Construction Business)

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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DEDICATION TO:

Che Puteh
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For the support, assistance and understanding

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LIST OF ABBREVIATIONS

3D	dirty, difficult, and dangerous
Bil	Bilangan
CET	Continuous Employment Training
CIDB	Construction Industry Development Board
CIMP	Construction Industry Master Plan
CREAM	Construction Research Institute of Malaysia
EPU	Economic Planning Unit
Etc	*(et cetera)*: and so forth pages that follow
IBS	Industrialized Building System
IBSO	IBS Organization
ICU	Implementation and Coordination Unit
ICT	information and communication technology
ISO	International Organization for Standardization
JAN	Accountant General Department
JPM	Prime Minister Department
OSC	Offsite Construction
OSM	Offsite Manufacturing
OSP	Offsite Production
KBS	Ministry of Youth & Sports
KDN	Ministry of Home Affairs
KETTHA	Ministry of Energy, Green Technology & Water
KKLW	Ministry of Rural & Regional Development
KKM	Ministry of Health
KKMM	Ministry of Communication & Multimedia
KKR	Ministry of Works
KLN	Ministry of Foreign Affairs
KPI	Key Performance Indicator
KPDNKK	Ministry of Domestic Trade, Co-operative & Consumerism
KPKT	Ministry of Urban Wellbeing, Housing & Local Government
KPM	Ministry of Education
KPWKM	Ministry of Women, Family and Community Development
KSM	Ministry of Human Resources
KWP	Ministry of Federal Territories
MC	modular coordination
M&E	mechanical and electrical
MIIE	Malaysia International IBS Exhibition
MinDEF	Ministry of Defense
MITI	Ministry of International Trade & Industry
MKRM	Makmal Kerja Raya Malaysia
MMC	Modern Method of Construction
MOA	Ministry of Agriculture & Agro-Based Industry
MOF	Ministry of Finance
MOSTI	Ministry of Science, Technology & Innovation
MOT	Ministry of Transport
MOTAC	Ministry of Tourism & Culture

MPIC	Ministry of Plantation Industries & Commodities
MS	Malaysian Standard
NRE	Ministry of Natural Resources & Environmental
PKK	Pusat Khidmat Kontraktor
PKNS	Perbadanan Kemajuan Negeri Selangor
PWD	Public Works Department
R&D	research and development
RP3	3rd Rolling Plan
SPPII	Sistem Pemantauan Projek II

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION TO THE RESEARCH

Building construction consists of various activities which involve land surveyors, planners, architects, engineers, quantity surveyors and finally contractors. Most professionals will participate from planning, designing, supervising and finally to completion of projects. They will carry out their roles professionally to ensure the quality of project, are within the agreed price and timely delivery.

Based on Outlook and Policy in 2014 (Bank Negara Malaysia, 2013), the key drivers sector to overall growth would be the services and manufacturing sectors. The construction sector came last in the year 2013, which contributed only 3.7 percent from total Gross Domestic Products (GDP).

However, there are plenty of construction activities that falls under services and manufacturing sectors. Activities such as manufacturing construction material, including IBS products. Construction activities also support finance and insurance, transportation, utilities, and equipment rental.

1.2 THE IMPORTANCE OF CONSTRUCTION INDUSTRY

Based on a CIDB Report (2014), CIDB had recorded a total value of RM123.72 billion which consisted of RM23.56 billion (19 percent) from public sector and RM100.16 billion (81 percent) from the private sector. The distribution of construction from public sector was recorded as the following; 30 percent was from

residential projects, 41 percent was for non-residential projects, 8 percent for social amenities projects, and the remaining 21 percent for infrastructure projects.

This expenditure for construction was very huge, and with the accordance with the nature of the construction sector's activity, which functions as the catalyst and stimulates the movement of other economic sectors. Therefore, not only the Government, but the industry players also should take this opportunity to leverage on the IBS system. IBS system should be the tools to simplify the construction processes. Furthermore, IBS system should had taken place in order to expedite the implementation and timely delivery of projects.

However for the year 2013, under the 10th Malaysia Plan, Economic Planning Unit (EPU) had an allocation of RM96.75 billion ceiling with approved 2013 allocation by the Ministry of Finance of RM44.41 billion (ICU, 2013). Until 17th November 2013, Accountant General Department (JAN) had reported that only 70.2 percent of average expenditure. If we go back to earlier record (ICU, 2013), until 30th June 2013, JAN had recorded only 34.5 percent on average expenditure. It is a worrying situation where at the end of June 2013, not even half of the allocation was spent. As we are made to aware, the Government had to borrow the allocation thus not maximizing the allocation given would be a waste. When it comes to borrowings, there are interest charged. Hence, the Government is very slow in implementing projects and this will affect the delivery of services to the people.

In term of projects, as of 17th November 2013 (ICU, 2013), EPU had approved 4,635 projects that consist of 3,132 (RM54.2 billion) physical projects and 1,503 (RM42.5 billion) non-physical projects.

According to the weekly report by ICU (ICU, 2013), there are 922 projects that were completed and delivered. There were two projects which did not take off and

219 projects were still in the planning stage. 278 projects are reported delayed. Details of project are available in Table 1.1 below.

Table 1.1 Report of RP3 (2013) Expenditure and Project Implementation until 17th November 2013

	KPM	KKLW	MOA	KKM	KKR	JPM	KPKT	NRE	KDN	KETTHA	MOTAC	MOSTI	MOF	KSM	MPIC	MOT	KPWKM	KBS	MITI	MinDef	KWP	KLN	KKMM	KPDNKK	TOTAL
CEILING (RM BIL.)	9.5	8.9	3.5	3.7	7.6	22.4	2.5	3.4	1.3	4.2	0.7	1.7	3.3	1.4	1.9	8.1	0.3	0.4	2.0	6.2	2.4	0.3	0.9	0.9	96.75
TOTAL PROJECT UNDER RP3	1,284	596	428	337	299	241	193	191	157	120	103	98	92	87	76	56	53	51	44	41	40	19	19	19	4,635
COMPLETED PROJECTS	488	61	11	97	33	25	38	24	42	15	20	0	9	5	1	14	10	12	1	4	10	2	0	0	922
NOT STARTED PROJECTS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
PLANNING PROJECTS	2	32	1	0	20	13	0	13	47	3	30	12	3	0	24	1	1	0	3	4	2	0	8	8	219
DELAY PROJECTS	107	16	6	25	26	17	13	2	10	6	9	0	5	0	4	5	14	1	1	8	2	0	0	0	278

Source: ICU, JPM

According to ICU, there were only 239 physical construction projects that delayed. In the pre-implementation phase, most of the projects were delayed during design (15) and procurement (19) stages. Careful measures are taken during this design stage as the designers are taking all their effort to fulfil client departments' requirement. This will minimize ratification during construction process. On the other hand, procurement process will consume time as this process requires certain time frame set by the MOF. Tender evaluation process also takes a lot of time. This process is vital to ensure that only competent contractor will be assign the task to do the job.

However, in the implementation phase, the main problem occurred during implementation which consist of 160 projects. It was a going concern where 66 percent of delayed projects were in construction of works. This means that we are having problem in delivering our projects. Delayed implementation of projects still occur even though a stringent selection process of competent contractors are followed. Details of delayed projects in various implementation stages are shown as Table 1.2 below:

Table 1.2 Details of Delayed Projects in Various Implementation Stages until 17th November 2013

	Pre-Implementation Phase 52 projects (22 percent)					**Implementation Phase 172 projects (72 percent)**			**Post Implementation Phase 15 projects (6 percent)**				**Total**
	Identification of site	Takeover of site	Brief project	Design	Procurement	Handing over of site	Preparation of site	Construction of works	Facilities	Handing over	Equipment and machine	Defect Liability period	
KPM	1	5	2	4	2	-	-	69	1	4	-	2	90
KKR	-	1	3	6	2	-	-	13	-	1	-	-	26
KKM	-	-	-	-	1	-	-	23	-	-	-	-	24
JPM	1	-	1	-	2	1	-	7	-	-	-	3	15
KKLW	-	2	-	-	4	1	1	6	-	-	-	-	14
KPKT	-	-	-	1	-	-	-	12	-	-	-	-	13
KPWKM	-	-	1	4	3	1	-	-	-	-	-	1	10
MOTAC	-	-	-	-	-	-	-	9	-	-	-	-	9
KDN	-	1	-	-	-	-	5	-	-	-	-	-	6
KETTHA	-	-	-	-	2	-	-	4	-	-	-	-	6
MOA	-	-	-	-	-	-	-	6	-	-	-	-	6
MOF	-	-	-	-	-	2	-	1	2	-	-	-	5
MinDEF	-	-	-	-	1	-	-	3	-	-	-	-	4
MOT	-	-	-	-	-	-	-	3	-	-	-	-	3
MPIC	-	-	-	-	1	-	-	1	-	1	-	-	3
KWP	-	-	-	-	1	-	-	1	-	-	-	-	2
KBS	-	-	-	-	-	-	-	1	-	-	-	-	1
MITI	-	-	-	-	-	-	-	1	-	-	-	-	1
NRE	-	-	-	-	-	1	-	-	-	-	-	-	1
TOTAL	**2**	**9**	**7**	**15**	**19**	**6**	**6**	**160**	**3**	**6**	**0**	**6**	**239**

Source: ICU, JPM

A study by Abdul Rahim, Singh, Md Yusof and M. Abdullah (2011) stated that the problems faced by employers in hiring foreign workers are high costs, lengthy procedures and the legal requirements and the time taken to obtain the approval. These are factors that frustrate employers in hiring legal foreign workers. Therefore, the implementation of IBS system is the right move towards reducing dependency on foreign workers.

This study will concentrate on the efforts taken by the Government on imposing the use of IBS system. The implementation of IBS system, hopefully, would shortens construction period and speed up delivery of projects as stipulated in the Roadmap for Industrialized Building System (IBS) in Malaysia 2011 – 2015 (Elias Ismail, 2011). This study is also to ascertain the contractors' response and awareness on IBS as their understanding are vital in order to move forward.

1.3 PROBLEM STATEMENT

One of the major problems for construction industry in Public Sector is late delivery of projects. Due to late delivery of projects, people will face problems to seek for services provided by the Government. The Government cannot provide proper services as the infrastructure is not ready.

Before switching to other methods of construction, i.e. IBS system, the Government, through PWD, is very selective in determining which contractor to undertake the projects. However, there are still projects awarded to incompetence contractors. Therefore, projects cannot deliver on time.

In 2003, the Government had introduced various strategies to ensure the delivery of projects on time as stipulated in the contract. To overcome this problem, the Government had played their role by imposing the implementation of IBS system

in public projects. Projects valued above RM10 millions have to undergo IBS system. From the studies made by CIDB (CIDB, 2007), the implementation of pre-cast concrete method (later named as IBS system) will shorten the construction period thus speed up the delivery of public projects.

However, the usage of IBS system does not guarantee efficiency of delivery of public projects. Efforts done only by the Government will not ensure the delivery of public projects on stipulated time. This has to follow with strict enforcement to ensure that all parties concerned are using the IBS system.

Before implementing the IBS system, the conventional technique also fail to deliver public projects on time. This might be that contractors do not show their seriousness in delivery public projects on time. Studies need to be conducted to identify their understanding towards IBS system. Contractors' feedbacks are vital to understand any shortcoming and the way forward for IBS system.

1.4 RESEARCH OBJECTIVES

The main challenge of the Government is to deliver public projects on time. Opting for IBS system was a move to ensure the efficiency delivery of public projects. Engagement between Government, through CIDB and PWD, with construction players need to address, to identify feedback or shortfalls from the contractors' angle. Therefore, the objectives of this study are basically:

i. To find out and compile efforts made by the Government to promote IBS system; and
ii. To find out contractors' responses on promotion and their understanding toward IBS system.