

‘ONE STOP’ HARDWARE ACQUISITION TREND IN BANGLADESH NAVY: CHALLENGES AND WAYS FORWARD

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Introduction

Dependency on a single country for foreign military hardware acquisition may lead to a trap for any navy. When a navy possesses a majority of platforms and ammunition from a single source, its warfighting capabilities becomes dependent on that supply source. On the other hand, war being a complex affair, there remains no assurance that the single source will supply war materials during the conflict. It may so happen that supplier country may not support the war effort of Bangladesh based on her own national interest. In a worst-case scenario, the supplier may even support the adversary for her own benefit.

As geopolitics has a major role to play in the present world order and individual countries act differently basing their own national interest, a majority of weapon acquisition from a single country may result in the crisis time supply chain break. Hence, it is time to examine the present hardware acquisition trend for fleet development, address the challenges and explore possible alternatives for Bangladesh Navy (BN). The paper would benefit Bangladesh Navy to ascertain the present acquisition trend and eventually discover the effects and finally search for alternatives.

Present Acquisition Trend of Bangladesh Navy

After analyzing the platform acquisition trend of BN, it has been seen that the majority of the fighting platforms of Bangladesh Navy were procured from China and the others were from the United Kingdom and only one platform from South Korea. Indigenously built ships comprise 11% of

the total force of BN. Again, the guns were acquired from five different countries. Most of the ship’s guns are of Chinese origin¹. Similarly, majority of the missiles are also of Chinese origin. Consequently, China being the major hardware supplier of BN, the majority of equipment-based training are being conducted in China. Allotted courses for overseas training in FY 2017-18 shows that 69% of courses on hardware were arranged in China.

Factors Leading to Purchase of Majority Naval Equipment from China

The demand for arms of various types is influenced by security perceptions of internal or external threats and by price and income, which determine what a state can afford. Following are the factors leading towards Chinese hardware acquisition trend in BN:

- **Cheaper Weapons:** Due to the availability of cheap weapons produced by China, countries used to buy second-hand cold war weapons, are now purchasing new replica of the USA or Russian weapons with increased sophistication and lethality. Presently China is producing submarines, aircraft carriers, destroyers, frigates and corvettes. Availability of such diversified and easily accessible weapons with cheaper price is attracting buyers around the world. The following table shows the cheaper cost of frigates offered by China in comparison to other four western countries.

Table 1: Comparison of Ship Building Cost						
	Cost in Million Dollar					
	China	USA	Norway	Denmark	Spain	Russia
Frigates	200 (053H3 FFG)	637 (Freedom LCS)	557 (Nansen class)	269 (Absalon class)	600 (Bazan class)	1 billion \$ (Grigorivitch- class)
Source: Compiled by Author ²						

1 Kawsir, Capt. (2018, June 6).

2 Business Standard. (2018, July 16). Frigate purchase from Russia hit by high cost of warship building. Retrieved from Business Standard: https://www.business-standard.com/article/economy-policy/frigate-buy-from-russia-hits-high-cost-of-warship-building-118071600029_1.html

- **Simplicity of Operating System:** In addition to being inexpensive, Chinese weapons are easy to operate as well as to maintain. These weapons are found attractive where technological knowledge of military professionals is low. In developing countries, this trend is usually high comparing to western weapons and sensors. Generally, western advanced weapons systems and sensors demand a high level of maintenance skill. Arrangement of training for such advanced weapons incurs additional load on naval budget.
- **Budget Constraint:** Naval budget takes the share of 12-13% of the total defence budget. Majority of the naval budget is generally allotted for maintenance and capital purchase. Considering the cost of new ships in world market navy faces budgetary constraint in developing force structure.
- **Indigenous Capacity:** At present most of the shipyards in Bangladesh are not equipped with the man, machinery and equipment required to build large warships. These yards are mainly engaged in building and repairing of inland and coastal vessels, up to 3,500 DWT. However, Ananda Shipyard and Slipways Limited, Dhaka and Western Marine Shipyards Limited, Chittagong are manufacturing ships of 10,000 DWT. Since no shipyard has yet built any frigate sized warship, lack of experience and confidence generally motivates buyers to resort to purchasing of ship from abroad.
- **Problems in Procurement Process:** New acquisition of BN encompasses new ships, submarines, aircrafts, weapons, systems and off the shelf platforms subject to the government decision. In the case of the capital purchase, detail planning is necessary. Due consideration is to be given as to what would be the requirement of spares, how it would be met, whether spares are available in the market, whether maintenance support system is existing in navy or whether the running of machinery/equipment will be economical for navy etc. As new acquisitions are involved with huge monetary matters, undesirable external influences i.e. political influence, lack of diplomatic efforts,

inexperience participations in tendering, corruptions, nepotism etc may tend to play a major role in the process. To make things worse, internal influences like lack of information, inadequate flow of information, lack of long-term goal, lack of coordination and synergy, ad-hoc decision making, frequent transfer of BN officers, the incompetence of concerned personnel also appear in the scene.

- **Robustness and Easy of Access:** Generally, Chinese hardware are robust in nature. Again, the Chinese government gives easy access to sophisticated weapons for the sake of business. On the contrary, access to western weapons is more difficult. Thus, ease of access is one of the motivating factors for purchasing Chinese hardware.

Case Study 1

Naval Weapon Acquisition Trend of BN Comparing to Other Countries of the World. A case study conducted by the author on five different navies to examine the pattern of capital ship acquisition trend and compare the same with the present naval fleet of Bangladesh. Selection of country for this case study was based on GDP³, Global Firepower ranking, number of naval assets, coastline, naval budget⁴ and geographical position. India and Myanmar were selected as neighboring country. Whereas Philippine was selected as the nearest militarily capable (according to Global Firepower Index) country in Asia. Again, selection of Singapore was based on the considerations to examine the acquisition trend of a developed yet smaller country in Asia.

While comparing the trend of naval platform acquisition in accordance with the list of naval platforms of above countries, it was found that Indian and Singapore Navy is mostly based on indigenously built ships, which comprises 60% and 56% of the fleet respectively. Again, Philippine navy's

3 Static Times. (2018). Projected GDP ranking. Retrieved from Static Times: <http://statisticstimes.com/economy/projected-world-gdp-ranking.php>

4 Global Firepower. (2018). 2018 Military Strength Ranking. Retrieved from Global Firepower: <https://www.globalfirepower.com/countries-listing.asp>

majority of the fleet comprises of US origin ships. Which comprises 56% of the fleet. None of these three countries possess ships made in China. On the other hand, Bangladesh and Myanmar are heavily dependent on Chinese ships. Both the countries possess 44% and 42% Chinese ships in the inventory respectively. Salient findings are given in the table below.

Table 2: Salient findings from case study- 1				
	Majority of ship	Indigenous capability	Fleet diversification (acquisition from different countries)	Liability on a specific country
India	India	60%	3	Russia
Bangladesh	China (44%)	23%	5	China
Myanmar	China (42%)	28%	9	China
Singapore	Singapore	56%	7	Australia
Philippine	USA	56%	9	USA
Source: Compiled by Author				

Impacts of Single Source Hardware Acquisition Trend in BN. Single source (or sole source) is considered to be risky from a traditional point of view, thus buyers are usually advised to avoid it. Effects of single source procurement trend in BN is appended below:

- **Impact on Supply Chain:** Dependency on a single source supplier for major hardware can lead to supply chain risk. Any disruption of supplier can lead to the detrimental effect on own supply chain. Especially in the case of navy where operational availability of ships and crafts are heavily depended on spares and constant support of supplier, maintenance of supply chain bears paramount importance.
- **Effect on Product Quality:** Quality is a frequently discussed issue related to Chinese origin products. One of the overriding merits of

Chinese hardware is the cheaper price than that of western counterpart with same type or configuration. But this factor does not remain cost effective considering the operational availability, maintenance longevity and reliability.

- **After Sales Service:** Most of the Chinese equipment starts malfunctioning within few months of commissioning. Though Chinese suppliers agree to provide warranty service, in reality, the warranty time passes in correspondence and sending defective item to China. Thus, warranty period is hardly enjoyed by the purchaser. Sometimes they also offer up gradation of the system in a very short period of commissioning. But western manufactures maintain the flow of supply in terms of spares and after sales service.
- **Obsolescence of Technology:** In China, all the military instrument factory/ institutes are state owned. They require permission from the government for the export of any equipment. The government generally permits the export of older technology. Therefore, even the item is bought newly, the chance of obsolesces remains very high. On the other hand, most of the western military manufacturers are private owned companies. Hence the purchaser remains free from the adverse effect of technological obsolescence⁵.
- **Arms Race:** Availability of cheap weapons in the world market has led to massive militarization and promoting mini arms race within developing countries around the world. This trend is creating a dangerous hotbed for the confrontation between these countries⁶. There has been a sharp rise in the military spending within the developing countries. Because of the cheaper price and easy availability, purchase of new consignments and systems of arms by one country automatically ignites similar or larger movement by neighboring countries. Table 3 shows how both Bangladesh and Myanmar are increasing their Armed Forces through the acquisition of cheaper weapons from China.

5. Mahbubur Rahman, C. (2018, June 14). Impacts of Chinese Hardware Acquisition. (C. Emon, Interviewer)

6. ANDERTON, C. (1986). Arms Race Modeling: Systematic Analysis and Synthesis. Ph.D. thesis, Cornell University., 347

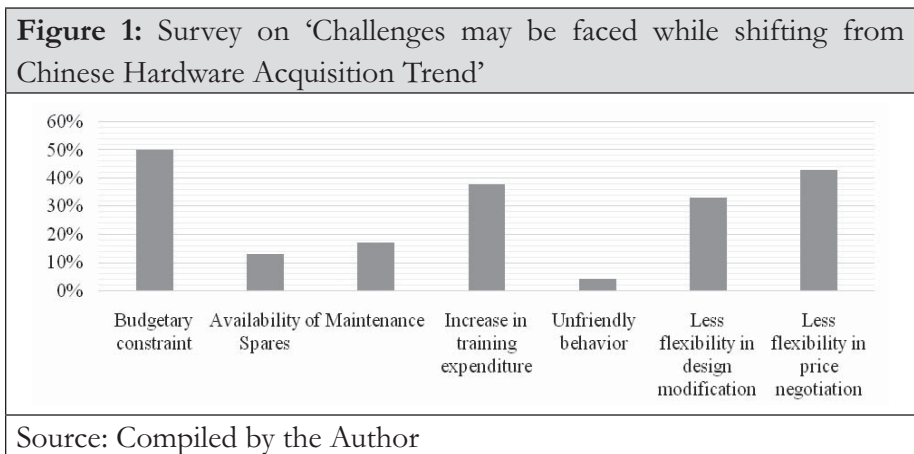
Table 3: Trends in International Arms Transfer 2015				
Exporter	Share of International Arms Export (%)	Main Clients (share of total export %)		
		1st	2nd	3rd
USA	33	KSA	China	Vietnam
Russia	25	India	China	Vietnam
China	5.9	Pakistan	Bangladesh	Myanmar
France	5.6	Morocco	China	Egypt
Germany	4.7	USA	Israel	Greece

Source: SIPRI Military Expenditure Fact Sheet 2015

- Technology is Determining Tactics:** Superiority in technology can change the outcome of any naval battle. Thus, naval tactics are based on available technology. Hence navies should be cautious while planning any capital platform or sensors. Due care is to be taken to ascertain the possible adversaries force structure. Mere purchasing cheaper platform may not provide much dividend. Even purchasing same type and class of platform and weapon as of adversary does not place in superior capability in the battlefield. Acquiring the same sensors also put navy in danger of confidentiality disclosure. There seems to be similarity of Frigate acquisition trend between BN and Myanmar Navy from China. This does not help BN to achieve superiority in terms of fighting power rather bring parity which eventually leads to another acquisition within a short period.
- Role Play by Supplier Country:** Procurement of majority hardware leads to over dependency on the supplier country. Navies should not be dependent on any single country. As the international politics changes very frequently and there is no permanent friend in international politics, thus today’s friend may turn into a foe tomorrow.

- **Geopolitical Influence:** In today’s warfare era, no one can fight alone. Thus, geopolitics plays a vital role in crisis situations. In the era of globalization, the free flow of trade creates dependency between the states. As a result, states create alliances to protect each other’s interest. Thus, irrespective of the justification and the cause of conflict, other countries are normally inclined towards own interest while supporting any party to the conflict.
- **Impact on Indigenous Capacity Building:** Easy access and availability of cheaper hardware is discouraging the policymakers in developing the indigenous capacity building in shipbuilding sector. Despite being one of the pioneer countries in shipbuilding sector, Bangladesh now has to buy ships from other countries. Bangladesh has a huge opportunity in this sector which has not been effectively explored because of the availability of cheaper platforms in the world market⁷.

Challenges to Shift from Chinese Hardware Acquisition Trend: Military hardware are costly. These are even more costly when the supplier is a western origin country. Besides, there are few more challenges that might arise while shifting from the present acquisition trend.



7. Bashar. (2018, May 14). One Stop Hardware Acquisition Trend. (C. Emon, Interviewer)

- **Requirement of Increased Budget:** A large quantity of less capable ships need sufficient maintenance budget and more men to operate them all. Thus, maintaining a large quantity or a qualitative naval fleet for BN will be a never-ending battle due to its economic constraints.
- **Maintenance and Availability of Spares:** Acquisition of ships from different countries will lead to the requirement of more line item management. This will encompass additional transportation cost. Managing more line items will also add the cost of additional manpower and overhead cost. Moreover, purchasing from a single supplier eventually develops supplier-buyer relationship by which buyer gets the advantage of price negotiation and design modification. Turning towards diversified supplier will allow the buyer to enjoy exclusive contractual agreement. Again, in certain major faults expert of the company has to be brought to physically assist in repair work. In those cases, western companies will charge more than the Chinese ones.
- **Training:** Diversified acquisition will require expert personnel on different types of weapons and sensors. This will create additional pressure on the training budget, as officers and sailors will have to be sent to different countries around the world. Even this additional pressure is not a once in a life cycle issue. Rather to maintain continuous availability of expert personnel the additional pressure on the training budget will continue to exist⁸.
- **Cost Degradation:** Multi sourcing policy helps in price negotiation. However, in most of the cases, Chinese bidders come as lowest ones. Thereby multi sourcing may not help much in the case of reducing the cost of items. Again China being the country of the largest number of suppliers in the world can easily accommodate less demand within their huge production line. Many of the western suppliers will not agree to supply a smaller number of items. In that case, the buyer may have to demand a greater number of items to catch supplier attention⁹.

8. Shahriar Alam, C. (2018, May 4). Abroad Training in BN. (C. Emon, Interviewer)

9. Wang, S. (2015, July 15). The case for single sourcing procurement. Retrieved from In touch manufacturing services: <https://www.intouch-quality.com/blog/case-single-source-procurement>

- **Western Business Culture:** The Chinese place more emphasis on relationships when it comes to their business culture in contrary to the western counterpart. Relationships with long term cooperation between companies can reduce the suppliers' market efforts and risks. So, the suppliers would often rather accept a lower price to keep this long-term relationship going. This makes them more cost-effective than their competitors. This is often not experienced within the western business trend.
- **Reduction of Vacancies and effect on Morale:** A prudent British naval commentator forecasted that these quality centric small navy is bound to be inefficient and cost-ineffective for the following reasons: "There can be no adequate flow of promotion, no large system of training (the cost of naval training establishments will necessarily prohibit this), no opportunities can exist for giving wide sea-going experience with big fleets, and, unless great expense is incurred, the material cannot be kept up to date." Hence, a careful balance is required for the quest of technological marvel and handy fleet size.

Alternatives of One Stop Hardware Acquisition Trend

Considering the adverse effect of single source procurement trend, it is the call of time to shift towards an alternative. This statement was again verified by a survey conducted by the author where the majority of the respondents opined that BN should not be dependent on a single country in terms of hardware.

Implementation of Pragmatic Process: Shifting from Chinese origin ship acquisition trend needs a pragmatic process to be followed. Following factors are to be adhered to for effective implementation of the process:

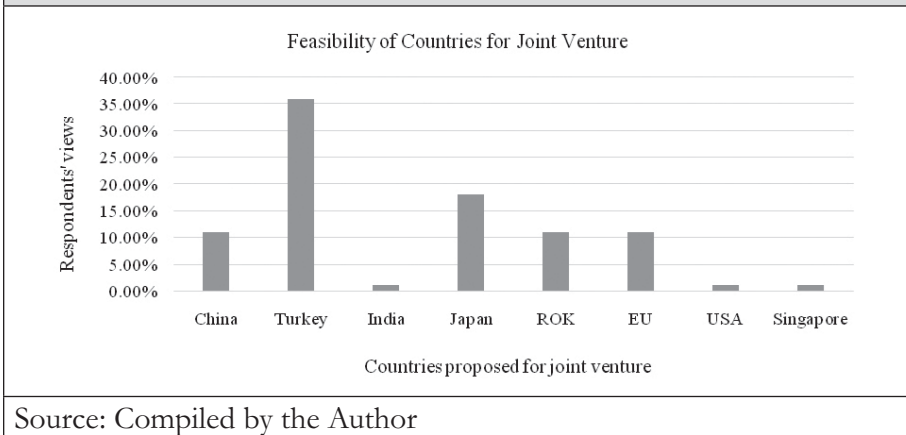
- **Indigenous Ship Building:** Increased shipyard capacity for construction of ships, repair, and maintenance will provide immense benefit for BN. As such, necessary progress is to be made in the field of designing, mechanical and electrical subcomponent systems of

commercial ships. These will directly benefit BN through dual-use of technologies. Slow, but steady development of indigenous medium-speed diesel engine productions will also provide direct relief to the BN’s current reliance on imported propulsion technology. The growth in cumulative experience within the commercial shipbuilding industry may provide a valuable technical foundation of human capital from which BN may draw necessary experience in building more complex warships. Bangladeshi naval architects, mechanical engineers, welders, and shipyard laborers will gain experience in commercial shipbuilding represent a strategic ready reserve of fundamental shipbuilding skills with portability to military production if ever needed.

- **Inter-Governmental Commission on Technical Cooperation:** There is an inter-governmental commission on technical cooperation between India and Russia. Myanmar also has a military cooperation agreement with Russia (Maritime Executive, 2018). Bangladesh may opt for such inter-governmental cooperation with other countries.
- **Joint Development and Production:** Bangladesh being one of the major warship purchasing buyers from China, may initiate joint venture proposal with China or any other country which may deem feasible.
- Again, to explore the favorable countries for joint venture project, another survey was conducted by the author. Result of the survey is shown in figure 2.
- **Senior Leadership Training to Read the Mind of Western Counterpart:** Frequent training may be arranged for senior military leaders, to read the mind of the western counterpart. This will enhance interpersonal relationship. It has been experienced that interpersonal relation even helps in reducing the price on the negotiation table.
- **Government Initiative to Change Mindset:** India has shifted their focus from overseas procurement to indigenous capacity building and moving ahead with “Make in India” slogan. Even Myanmar possesses

more indigenous ships in their inventory than that of BN. Navies should be primarily dependent on their own industries of the country or to some other country where a conflict of interest may not occur between the countries. The government may take the lead to change the mindset from the cheaper hardware of China to the more qualitative source of other favorable countries¹⁰. An inter-ministerial committee may be formed to propose and implement such initiative.

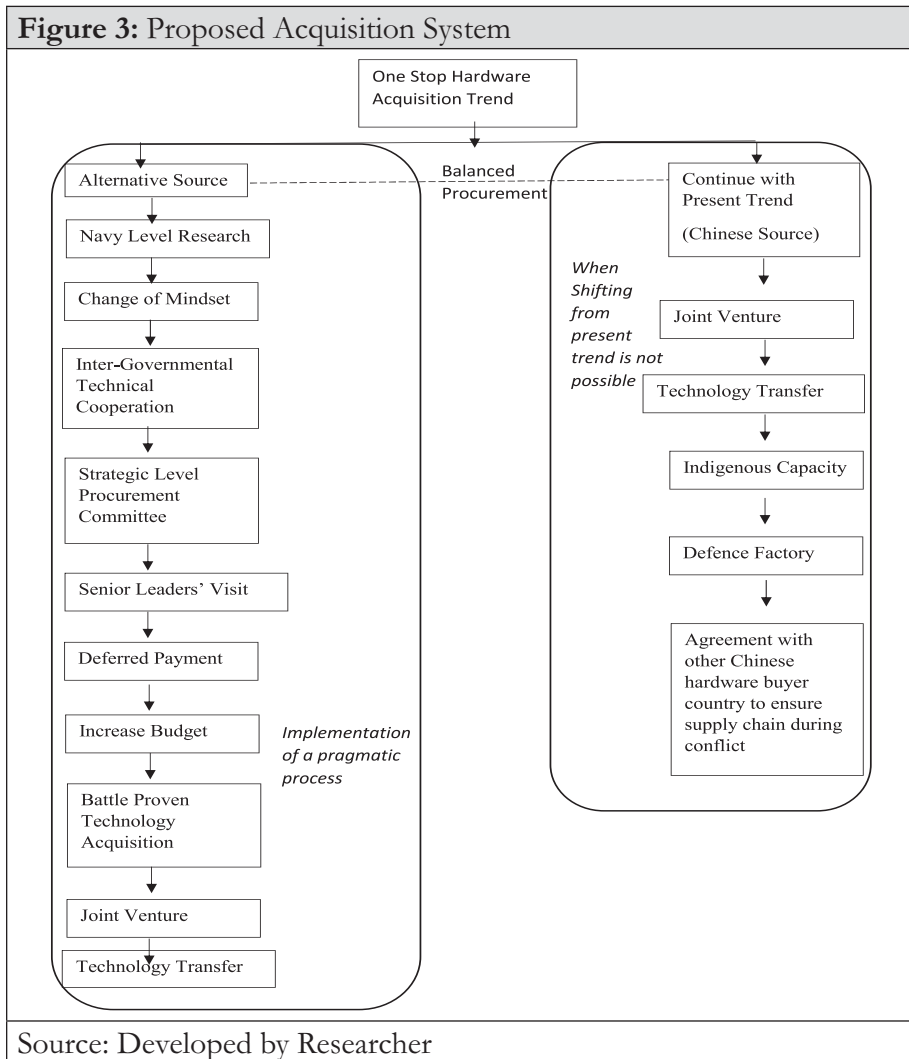
Figure 2: Survey result on ‘Feasibility of countries for the Joint venture with BN’



- **Battle Proven Technology Acquisition:** Acquisition of new unknown technologies may offer two-pronged problems. Firstly, newer technology costs disproportionately high and unproven technology may fail to prove service worthiness. Hence, it is always safer, for BN, to wait for someone else to take the risk. Therefore, BN should look for battle proven and reasonably modern technology.
- **Holistic Framework for Sustainable Force Development:** Promulgation of a holistic framework for sustainable development is mandatory for any navy. Thus the development circle should be pragmatic enough, considering the challenges and long term effects. Forming a strategic level defence procurement committee may be a feasible option for such sustainable development.

10. Niamul Hasan, c. (2018, September 11). Chinese Hardware acquisition. (C. Emon, Interviewer)

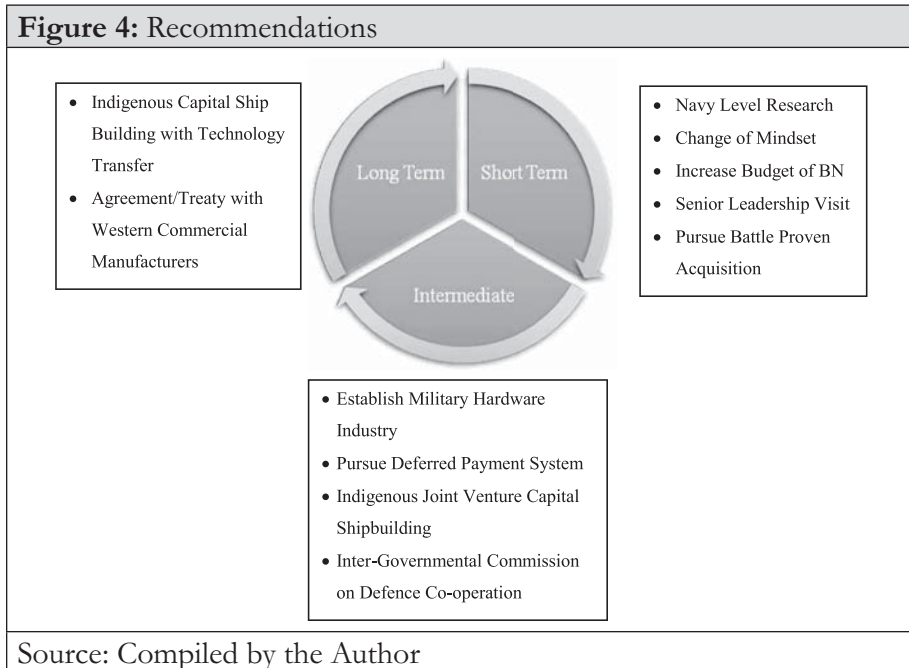
- Implementation of Deferred Payment:** Capital purchase from western countries will incur more money than that of China. Thus implementation of deferred payment process will be necessary to reduce unusual pressure on the budget¹¹. Military cooperation, bilateral engagements and defence dialogues with the seller country will ease the process of procurement.



11. Zamil Hossain, C. (2018, September 11). Impacts and ways forward of Chinese Hardware Acquisition. (C. Emon, Interviewer)

Recommendations

A realistic approach encompassing short, intermediate and long-term measures may be taken to move away from present ‘One Stop’ hardware acquisition trend of BN and shift towards alternatives.



Short Term Measures

- **Navy Level Research:** An extensive Navy level research may be carried out to find a list of suitable Western/European countries where it will be feasible to shift our focus for capital ship purchase or hardware acquisition.
- **Change of Mindset:** A change in mindset from highest to naval policymakers is exceedingly necessary to change this ‘One Stop’ trend. As such, Government may take the lead role and form an Inter-Ministerial Committee to propose and implement such initiative. Naval experts may be incorporated in that committee to provide necessary inputs.

- **Increase Budget of BN:** Navy may originate necessary persuasion to the Government for increasing the naval budget to a significant quantity which will allow to purchase/acquire western ships/hardware.
- **Frequent Senior Leadership Visit:** Senior Government and Naval officials may have frequent visits in those short-listed countries to read the mind of their Government & commercial manufacturers and create good inter-personal relationships for easy future procurements.
- **Strategic Level Procurement Committee:** The government may form a strategic level defense procurement committee for pragmatic and sustainable future force development in future.
- **Pursue Battle Proven Acquisition:** BN may pursue battle proven and reasonably modern technology for future procurements which might have an upper edge over our potential adversary’s same category platforms/armaments/sensors.

Intermediate Measures

- **Establish Military Hardware Industry:** The government may establish more military industries to support indigenous shipbuilding and manufacture spare parts/armaments/sensors in future. In the long run, these would help us to attain independent capital ship building capability.
- **Pursue Deferred Payment System:** Western/European countries & commercial manufacturers may be pursued for accepting deferred payment system mentioning our budgetary constraint to avoid single payment burden.
- **Indigenous Joint Venture Capital Shipbuilding:** Necessary infrastructures may be constructed at CDDL for indigenous capital shipbuilding in Joint Venture with a suitable country. While selecting a country for joint venture, foreign policy/relationship/defense co-operation with our neighbors may be addressed with due priority.

- **Inter-Governmental Commission on Defence Co-operation:** An Inter-Governmental Commission on Technical Co-operation may be formed with a technologically advanced country to attain joint combat readiness. Necessary agreements/treaties may be prepared for defense co-operation, training, supply of spares, Research and Development. Provisions may be kept to transfer the technology in future for attaining independent shipbuilding capability.

Long Term Measures

- **Indigenous Capital Ship Building with Technology Transfer:** After having reasonable indigenous capital ship building experience in joint venture, BN may envision for independent capital ship building at home yards with Technology Transfer.
- **Agreement/Treaty with Western Commercial Manufacturers:** Through Government level, BN may pursue necessary defense agreement/treaty with Western/European commercial manufacturers to supply sensors/armaments/spares till we attain that capability to manufacture at own industries.

Conclusion

Dependency on a single country for foreign military hardware acquisition may lead to a trap for any navy. Recent trend of Bangladesh Navy's acquisition process is concentrated on cheaper and easily accessible arms transfer source of China. The factors driving towards purchasing Chinese origin hardware are the availability of cheaper hardware, budgetary constraint of BN, simplicity of operating system and easy access. Limitations in the procurement process, lack of indigenous capacity and geopolitical influence also play a vital role in this aspect.

As geopolitics has a major role to play in the present world order and individual countries act differently basing their own national interest, the

majority of weapon acquisition from a single country may result in a crisis time supply chain break. Other effects emanating from Chinese origin acquisition encompasses degradation of overall quality, unsatisfactory after sales service, and rapid obsolescence of technology.

To encounter these adverse effects of sole sourcing, indigenous capacity may be a preferred option for any state. Again, naval budget needs to be increased for qualitative force structuring. Along with these challenges, management of the additional line of spares and increased training expenditure will create increased burden on the budget. Moreover, shifting from present trend may lead towards cost degradation and limited flexibility in design modification with the seller.

Considering the adverse effect of single source procurement trend, it is the call of time to shift towards an alternative. Capacity building for indigenous production, joint venture with other countries, Intergovernmental commission for technical cooperation and above all change of mindset towards a holistic approach of capital ship acquisition may be few of the many ways out in this aspect.

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