Lacking a backbone

The controversy over
the "National Broadband Network"
and Cyber-education projects

by

Raul V. Fabella*

and

Emmanuel S. de Dios*

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* School of Economics, University of the Philippines. We acknowledge with thanks helpful discussions with various experts and stakeholders, especially Bill Torres, Men Sta. Ana, Calixto Chikiamco, and Robert Nelson. Thanks are also due to Ma. Cristina B. Fabella for research and editorial assistance. Errors are ours alone.

Abstract

The National Broadband Network (NBN) project and the Cyber Education Project (CEP) are state-initiated programs originally conceived to provide last-mile connectivity and interoperability to all government offices and all public schools, respectively. The backbone service required for this was to be procured from the private sector either from extant backbones or via BOT. When the soft loans from China became available, these two programs became scaled up to include two government-owned backbones. We examine the possible economic rationales for a government backbone and found the scaled-up NBN and CEP severely wanting. The prior question we address is: Does the Philippines need a government-owned backbone? Our answer is: No.

Introduction

Having confounded its critics by weathering the most profound political challenges and having averted what had seemed an ineluctable fiscal crisis, the Arroyo administration is now on a self-proclaimed "legacy mode". For many, this is a welcome sign, a hopeful promise of relief. What most people *think* it ought to mean is a stronger commitment henceforth by the administration to a coherent vision and to policies to bring it about; a greater focus on priorities patently accepted as being in the public interest; and a greater devotion to transparency and professionalism in decision-making to gain all-party support and legitimacy for such major initiatives. At the very least, one would have thought, the administration should henceforth steer clear of policies and projects that were so obviously biased and egregiously one-sided that they tended to stir controversy rather than invite cooperation and support – or so one might have thought.

It is unsettling, therefore, that so soon after the mid-term elections (the conduct of which is another issue altogether), the administration should again be embroiled in a mess of its own making. The wonders and mysteries surrounding the government's most recent initiatives on information and communications technology (ICT) are quickly threatening to abort the administration's attempts to resurrect its credibility, not to speak of "establishing a legacy". Two projects in particular have quickly become controversial: the first is the government's project to build its own digital communications "backbone" called the "national broadband network" (NBN); the second is the proposal to link public schools via a satellite-supported network to enable pupils and teachers to access the internet and other resources.

The bold vision

The irony of it all is how everything began so auspiciously, sensibly, and with the best intentions – on paper, anyway. After all, it is hardly debatable that providing the greater mass of people with digital access to data and communications through greater bandwidth is a matter worthy of national-government attention. It is already evident that the rapid growth of the services sector in the gross domestic product (GDP), for example, is based in no small degree on the increasing utilization of the digital information and communications infrastructure. Unlike the country's physical transport and logistics

infrastructure, which have been neglected for decades, the Philippines' information and communications infrastructure has been the recipient of recent massive (mostly private) investment. Ubiquitous cell-phones and the network supporting them are only the most visible aspect for the layperson. Unseen for the most part, however, is how a good deal of the digital "information highway" is really built upon two "backbones" or networks of optic fibre, linking the entire country and providing access to the rest of the world. These backbones – one is owned by PLDT while TELECPHIL is jointly owned by all other telecoms companies – have come to support numerous new industries, ranging from business-process outsourcing (BPO), to electronic payments and clearing systems (e.g., ATMs and credit and cash cards), down to internet and gaming cafés. Because of such investments, it is significant to note that the Philippines actually scores respectably on e-readiness and connectivity for a country with its level of income.[1] This is more than can be said for other types of infrastructure.

Nor is there any doubt that substantial social dividends are forthcoming from the extension of the same access to data and communications to hitherto underserved government offices and to the country's vast schools system.

The administration was quite on the mark, therefore, when the president outlined the idea of a "cyber-corridor" in her 2006 state-of-the-nation (SONA). That vision, as fleshed out subsequently in the Commission on Information and Communications Technology's (CICT's) strategic ICT roadmap, called for greater broadband access, inter-operability and connectivity, and for the diffusion of such cost-saving technologies as VOIP (voice-over-internet protocol) and digital conferencing. As many ICT experts have pointed out – and as government itself recognized – a major constraint to connectedness in the country was the "last mile" problem. In short, even as "information highways" might connect various islands, provinces, cities, and indeed the world, there are few or no links connecting them to final users, such as communities, households, schools, as well as local units and agencies of government. It is as if expressways had been built but not the municipal and barangay roads that would connect people to such high-speed lanes. A

[1] Author's own computations.

related problem, of course, is that few people own the "vehicles" (read: computers and peripherals) needed to travel such roads, metaphorically speaking.

The original mode the government envisioned to develop and expand that cyber-corridor was also unexceptionable. Government's plans, as well as their subsequent elaborations, invariably pressed for a *public-private partnership*, where the private sector would be "implementor" and the government the "enabler" in the context of the "ICT Roadmap" [Sales 2006 Message of the Chairman]. Indeed, the proposed Government ICT Project (Annex A-2 (2001)) viewed its Alternative Communications Program (ACP) as "a private activity, wherein it will undertake to finance, build, install, operate and maintain telecommunications facilities and provide basic telecommunications...in 34,000 unserved barangays and telecenters and 1,500 municipalities of the country".

The DOTC's Philippine Information Infrastructure Program also envisioned the "development of a robust and expanded digital infrastructure *with the private sector playing a major role*" (Strategy 1) [Emphasis supplied]. The thrust was to enhance the inter-operability and the connectivity of all networks to attain "universal access" at affordable cost. The currently available broadband backbones (those of the telephone companies (telcos) and the National Power Corporation) would serve to fill the country's urgent need for ample, universal, and affordable broadband access. The brunt of the work was expected to consist of providing "last-mile" and missionary connections (i.e., connections to remote and inaccessible areas).

It is essential to note that original government plans *at no point envisioned a separate backbone* to be financed, owned and operated by, and dedicated to the needs of the government. At worst, what was recommended was a market-mediated build-operate-and transfer (BOT) plan. During the cabinet meeting of 21 November 2006, President Arroyo was reported[2] to have taken the (correctly) adamant position against government spending for any backbone. Her strongly expressed stricture was at most for a BOT arrangement *without* "take-or-pay" provisions – and for good reason. After all, such "take-or-pay" provisions – under which government commits to pay a fixed amount to

[2] As reported by Lustre on 14 June 2007.

the private supplier, whether or not it makes any use for the service – were the culprit behind the huge losses and stranded liabilities of the National Power Corporation, which were a large reason for the administration's fiscal woes. A consistent policy to rely primarily on private-sector initiative was also the motive behind the government's proposal to privatize its own network (the Telecommunications Office, or Telof). This clearly meant that the government planned to rely mainly on existing privately-owned backbones as the conduit for the government's broadband program.

Up to the early this year, therefore, most of the government's plans for expanding IT access appeared consistent and benign. Indeed, they seemed to draw and build upon the logic and success of past privatizations, which had either brought in revenue, promoted efficiency, better service, or both (e.g., revenue in the sale of San Miguel and Napocor; efficiency in the privatization of water-supply concessions).

The volte-face

It was completely unexpected, therefore – how and why is still not entirely clear – when this apparent resolve and consistency crumbled and the government's reversed its direction. In April 2007, President Arroyo stood witness to the signing of two commercial agreements in Hainan, China. These included the offer of a $329-million ODA loan at three-percent interest, payable over 20 years. It was then revealed that the budget for the government-broadband network had now been scaled up from the modest ₱5.1 billion to a whopping ₱19.3 billion. The huge blow-up in cost was apparently largely due to the provision for an independent transmission backbone, a satellite-based system for the last mile distribution, and related infrastructure (i.e., an IP core network, an integrated data center, and network support and management systems [Oliva 2007a]). Then came the announcement that Telof was now to be retained as an integral part of the new NBN program.

The justification for this all-too-obvious policy-reversal [Amojelar 2007] was that it would lower government fixed-line telephone expenses by 50% and its general telephone expenses by 8%. The government's total expenses for telecommunications usage currently amounts to ₱3.7 billion annually, with fixed-line phones serving as anchor for most data and internet-exchange. The total project, on the other hand, including the

reported ₱11.5 maintenance and operation over 15 years, is to cost some ₱31 billion, a figure that likely even an underestimate, since it fails to factor in delays and cost-overruns. Even if the project were to live up to the hype, therefore, and end up halving all government's telecoms expenses, the savings would still total only ₱27.75 billion over fifteen years, an amount even *less* than the ₱31 billion the system would cost over the same period. The numbers (at least those that have been made publicly available which however seem to morph as the criticism mounts) simply fail to add up.

And, as if there could be any doubt regarding the policy-reversal, the so-called Cyber-education Project (CEP) also came forth. A component of the original NBN was the so-called "e-Education program", which involved providing universal connectivity and content for the nation's public schools. Again all this meant originally providing schools with the means to gain access to already-existing networks (e.g., last-mile connections and computer equipment), rather than establishing a separate network *per se*. Its budget was initially pegged at ₱5.2 billion. Through some inexplicable twist, however, even this project became scaled up to entail *a second* government-operated backbone, satellite-enabled this time, *in addition* to the NBN backbone, whose necessity the president herself questioned to begin with. With the ramping-up to a dedicated satellite-enhanced backbone, the original e-Education project cost of ₱5.2 billion has now soared to a staggering ₱24.6 billion (more than half a *billion* dollars).

During the cabinet meeting of 21 November 2006, President Arroyo reportedly raised the question whether there was even a need for a government network backbone; and second, if there ever was to be one, she also insisted that it be implemented via BOT in order to reduce government exposure. In a letter dated 1 March 2007, the government ICT brain-trust, DOT, CITC, NTC, and even Telof officials prudently nixed the two-backbone concept.[3]

In the event, after everything is said and done, the government has now incredibly ended up batting not just for one but for two publicly owned government broadband backbones! How has this happened?

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[3] As reported by Chanco on 27 May 2007.

Kindness that kills – donor-driven projects

The solvent that has turned hard economic sense into amorphous policy-mush seems to have been "concessional" financing. The common element and rationale for the upscaling of both the NBN and Cyber-education projects was the availability of official-loan finance, in this case from China. The China Export-Import Bank offered a $329 million loan to finance the NBN on condition that the project was awarded to the Chinese company ZTE. Similarly, the China Export-Import Bank has offered an even larger loan (equivalent to ₱21.48 billion or close to $500 million) to cover the cost of the e-education project, equipment again to be supplied by designated Chinese companies. Presidential misgivings and expert opinion notwithstanding, the only consideration that seems to have mattered is that the financing for the project is "very concessionary" [Oliva 2007c].

China's newly-discovered generosity is, of course, neither strange nor totally unexpected. That country is, after all, currently sitting on some $1.33 trillion in foreign-exchange reserves. It therefore has an obvious imperative to offload some of these so that they yield a return of some sort, but also in order to deflect the incessant criticism of its policy of undervaluing the yuan. As most *parvenu* trading powers are prone to do, however, China has sought to use tied foreign assistance as a tool to simultaneously unload some of its reserves and still advance its mercantilist purpose. An obvious solution is to pass off some of its idle reserves as loans to developing countries as an incentive for the latter to import from Chinese home firms, thus sustaining employment and the breakneck growth at home. Moreover, collecting a risk-free three percent (because sovereign-guaranteed) on multimillion dollar loans is not such a bad use of money – it in fact represents a higher return than those Chinese reserves are fetching anyway. In many ways, therefore, China is doing a favor primarily to itself – "very concessionary", indeed. This is tied aid, pure and simple, defined by the DAC as

> official or officially supported loans, credits or associated financing packages where procurement of the goods or services involved is limited to the donor country or to a group of countries which does not include substantially all developing countries.

Tied aid is nothing new, of course. Even Japan and the US openly resorted to it in their bad old days, although most donors now know better to soft-pedal things and reduce conditions that explicitly tie loans to their own suppliers (e.g., by allowing international

bidding). But though one may justifiably raise eyebrows at the Chinese – who are after all newcomers to the foreign-aid game – for their somewhat coarse cupidity, it should really cause no surprise that they should be conscious of their country's interests and seek to promote these avidly. Instead what *should be* surprising is if the Philippines and its leaders were sufficiently unaware of or oblivious to *their* country's own interests to be caught in the trap of donor-driven projects.

It must be admitted: public spending on infrastructure in the Philippines suffers from a peculiar dilemma that often makes a resort to foreign borrowing attractive. Congress seems incapable of approving infrastructure budgets of any sizeable amount and with any gestation periods longer than the period between two elections. The most that lawmakers seem capable of mustering are local projects of limited significance (local roads, local school buildings, etc.), designed primarily for maximum electoral impact on the "folks back home". We like to call this the " divide-by-N imperative". As a result, most projects of a sizeable character or of national significance have always relied on either of two modes: (a) foreign financing such as for the North Rail Project and MRT Line 2 (Santolan-Dasmariñas); (b) various build-operate-and-transfer schemes, such as the NAIA Terminal 3 and the North Luzon Expressway improvement. As such examples already show, there are both good and bad examples of each. In both cases, since no budgetary allocation is required, the executive branch is able to give fuller scope to its vision, thus evading the parochialism of congressional priorities – but also eluding congressional scrutiny, except for the odd *ex post* congressional investigation or so.

Tied aid …

But that's the rub: each of these alternatives has its peculiar pitfalls. Both are especially vulnerable to large-scale corruption (or perhaps, more fairly, the *suspicion* of large-scale corruption) owing to the huge amounts involved, the typically one-off or idiosyncratic nature of the projects, and the resulting great discretionary power of officials dealing directly with foreign governments and private companies.

An added challenge peculiar to foreign-assisted projects is that of ensuring the integrity of the selection of contractors, a process which often tends to be biased in favor of supplier-firms from the donor-country which are necessarily the cheapest or the most

effective. An obvious step in the right direction would be to throw open the doors to the widest international bidding, and indeed, many member-countries[4] of the Development Assistance Committee (DAC) have removed tied-aid restrictions along an increasing spectrum of liberality to permit competitive bidding for ODA contracting among: (a) firms from the same donor-country; (b) firms from across different developed countries; and (c) firms from both developed *and* developing countries. The UK, for example, completely untied all procurement in its ODA in the sense of (c) as of 2001. Not even the latter is perfect, of course, since it has still been possible in practice to stack the odds to favor donor-country firms. Still no one will argue that competitive international bidding would in principle be a reassuring practice.

But not even tentative attempts at transparency are currently forthcoming from the ODA of China – which remains studiously oblivious to evolving DAC practices and exhortations. Hence Chinese authorities blithely handpick their favorite home-firms as ODA contractors, with the recipient country being asked either take it or leave it. (The Philippines until now has invariably "taken it".) In the NBN deal, for example, the Chinese government selected the ZTE Corp., just as it unilaterally selected China National Machinery and Equipment Corp. Group[5] (CNMEG) as contractor for the controversial North Rail project. Objections to this patent lack of competition and transparency are brushed aside with the bizarre rationale that China is a "socialist" country with its "own processes" (DOTC, as quoted by Oliva [2007c]) for selecting contractors.

Transparency is not helped any on the Philippine side, either. A complicating circumstance is the ambiguity of Philippine laws regarding "government-to-government" deals, which can be and has been interpreted as allowing negotiated contracts between heads of these two governments. This, together with the Marcosian legacy of removing

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[4] The DAC, a subcommittee of the OECD, has defined the standards for foreign aid since it was formed in 1960. Its membership consists exclusively of developed countries, namely European Countries plus the US, Japan, and the European Commission itself. In 2001 the DAC members agreed to untie aid to the "least developed countries", which group does not include the Philippines.

[5] Part of the trouble was the confusion during the controversy between this group and one of its subsidiaries the China National Machinery Import and Export Corporation.

foreign loans from congressional scrutiny, makes such deals opaque and leaves a lot of room for grand corruption – or, more accurately, the *suspicion* of grand corruption.

In a world of tied aid[6], therefore, the "concessionary" terms of the financing are never a sufficient argument for borrowing: for these must be balanced not only against the financial burden of repayment and the closeness of the match between the project and equipment proferred and the country's real need for it.

Versus BOT…

The competing scheme initially considered for the NBN was to implement it as a build-operate-transfer (BOT) project. BOT schemes have this advantage over official loans: they at least allow *in principle* for a more open process of selecting suppliers and contractors. In the simplest and purest form of BOT, the government specifies the technical requirements of the project it wishes to implement and solicits bids from private contractors who might wish finance, build, and possibly run the project (say, an airport or expressway) out of their own pockets. The bidder who offers to build the facility most cheaply, charging the public the least for its use, gets awarded the project in exchange for the right to collect fees or tolls. Alternatively, private proponents may approach government with project plans of their own. In such "unsolicited bids or proposals" government in principle merely has to say yes or no. The cost-effectiveness of the original proponent may in principle be checked through a "Swiss challenge", i.e., other bidders offering to execute the original proponent's plans themselves.

In practice, the situation frequently became involved, owing to the past practice of granting various guarantees to winning proponents as an incentive for them to undertake the project. Such guarantees have taken the form of, among others[7]: (a) guarantees to repay loans incurred by the builder-operator in case the latter should default (so-called "sovereign guarantees"); (b) guarantees against foreign-exchange fluctuations; (c) guarantees to pay the builder-operator a minimum return regardless of the extent of the public's use of the facility (or so-called "take-or-pay" or "minimum off-take"

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[6] For 2006, the OECD estimated that 42 percent of all global ODA was untied, meaning that 58 percent remained tied

[7] See Llanto [2006] for a more complete discussion.

provisions); or (d) guarantees to compensate the operator for government's failure to deliver on certain promises (e.g. so-called "performance undertakings"). Since the disastrous losses and contingent liabilities due to Napocor, the purchase-power agreements (PPAs) of independent power-producers, LRTs 1 and III, however, the government now appears to know better. Hence, "No guarantees," the president admonishes.

Even without guarantees, of course, BOT schemes are far from perfect. After all, bidding rules may be rigged to accommodate inefficient contractors and costly facilities. And although no government funds become implicated in BOTs, the public could nonetheless be saddled with the burden of long construction delays, inferior services, and unreasonable charges. The prime example of such a failure is the overpriced, substandard, and long-delayed NAIA Terminal 3 project, whose attendant corruption would have ultimately resulted in exorbitant airport fees for the public. As if to underscore that there are really no corruption-proof schemes, the NAIA 3 was ironically the outcome of a *successful* Swiss challenge of an unsolicited bid. (Leading one to think it would have been an improvement over the original proposal.) But the odious stink of that project is evident and its filth has now smeared the façades of three administrations.

Despite such risks, however, a non-guaranteed BOT has the edge over a government-operated, ODA-funded project in two respects: (a) as already mentioned, it would relieve the government of the costs of putting up and maintaining the project, thus obviating the problem of government operational inefficiency and corruption; and (b) if truly non-guaranteed, a BOT project would at least willingly subject itself to the market test. That is, it would succeed or fail based on its own assessment of the market and other risks involved. Applied to the case of the NBN and Cyber-education projects, private proponents (e.g., reportedly Amsterdam Holdings and Arescom) would in principle assume the risk of raising the finance needed to put up the project and actually running it themselves.

By contrast, the donor-driven, double-backboned animal emerging from the NBN and CE proposals would require government itself to commit to repay loans in the future (together with attendant foreign-exchange risk); risk the installation of excess capacity;

commit itself to continuing expenses of operations personnel and equipment maintenance and repair; and finally bear the risk of corruption or the high cost of preventing it among its employees. In a word, it would require the government to play the role of entrepreneur. Experience says there is every reason to expect government to fail in all these tasks, and that experience is summed up in one word – *Napocor*.

Lack of clarity leads to discretion and controversy

The debate over whether the NBN should be put up and run by government itself or implemented via BOT has also become confused largely because the government has failed to specify: (a) its minimum technological requirements and (b) its minimum commitments if the project were to be implemented via BOT. As a result, government officials are able to fob off one proposal against another by merely citing one or the other technical detail. One proposal, for example, has been criticised as using "outdated satellite technology" compared to the others. One is said to provide "85 base stations and 500 cell sites, while government ha[s] to buy its own cell phone units and voice over Internet Protocol (VoIP) terminals". Another proposes "21 base stations and 83 customer premise equipment, along with a satellite central hub station". Finally, at significantly higher cost, another promises "145 repeater stations, 30 IP-based virtual private network nodes, 300 base stations, 25,844 customer premise equipment with VoIP terminals, and the establishment of one Internet data center doubling as the Network Operating Center with back up" [Oliva 2007b].

To begin with, *if* the government seriously believed the NBN backbone was a vital project, then it ought first to have completed the preliminary work – ideally all the way to a feasibility study – of identifying the magnitude and urgency of the need, the technology and equipment required to fill it, and a ballpark figure for its cost. Only then could government have defined the terms of reference for an honest-to-goodness competitive bidding for a BOT, or even decided the magnitude of the loan it needed to borrow.

Since it did not set its own minimum conditions beforehand, however, the government effectively allowed bidders and loan-pushers to write their own terms regarding what should and should not be included in the NBN project, what technology should be used, and so on. No common basis can then be laid for a comparison of options, since

deliverable features will always vary with cost. This situation is as absurd as calling for a bid to supply government with “fruits in general”. Then it becomes impossible to judge whether the best bid is P325 for five kilos of mangoes rather than P840 for six kilos of litchis. Put alternatively, in the absence of parameters, *any bid* can always be justified as being “best” by selectively citing differences, such as price, quantity, technology, etc. This gives great leeway for discretion – and not too far behind, opportunities for corruption – on the part of those authorized to make the final selection.

Moreover, the government also displayed inconsistency at the very least when it seemed, on the one hand, to consider unsolicited proposals from AHI and Arescom while on the other hand negotiating on the side with the Chinese government for a loan of variable amount. In such circumstances, any unsolicited proposal can always be made to appear inferior simply by negotiating a more ambitious (because more costly) project with the Chinese. Once more transparency is badly served, and the public is asked to compare mangoes and litchis of varying amounts.

Part of the problem is structural and bureaucracy-related. Perennially plagued by deficits and shrinking infrastructure budgets, the government through the years has not found it useful to devote enough money and attention to elaborating its infrastructure plans beyond broad sketches. Little money is typically allotted to do full-blown and independent feasibility studies and detailed long-term plans, while the bureaucracy’s capacity to evaluate proposals based on state-of-the-art criteria and global standards is almost nonexistent. As a result, the technical upperhand is abdicated (wittingly or not) to project proponents such as turn-around artists in unsolicited bids and ODA merchants. One consequence of this is that the government often becomes unduly biased in favour of loan-packages that also pay for the technical and economic feasibility studies. In the case of the North Rail, for example, one reason the government selected the Chinese over a Spanish proposal, was that the latter did not pay for feasibility studies. But then that almost predictably ties the project to that particular country’s suppliers and chosen technology. The situation is similar for unsolicited bids, which is why the rail-gauges of MRT 1, MRT 2 and MRT 3 are all different, and why the nonfunctional NAIA 3 is irrationally still in the heart of a metropolis rather than, say, in Clark. The same events

are about to occur in the NBN and CE projects, and most likely in many other infrastructure projects as well.

The situation is pathetic in one sense, since it vividly illustrates the adage about beggars not being choosers. On the other hand, it also undoubtedly serves the interest of a few when the country does *not* make the best choices. But whatever the reason – whether it is poor regulatory design, or bad design among regulators – transparency becomes ill-served and the public should not be pleased.

The economic rationale

Most headlines and commentary have focused on what has already been discussed thus far – the selection process for the NBN and CE projects, including the qualifications of the would-be suppliers. It is more fundamental, however, to evaluate the plain economic arguments for or against them, something that the authorities appear not to have done. In doing so, the following considerations seem beyond doubt.

Exploiting scale economies

It is typical of "network economies", of which ICT backbones are an instance, that the unit-cost of service falls with increasing capacity-utilization (measured, say by number of users). This is because fixed costs are high while variable costs are low. As already noted, there are now already two operational backbones, both privately-owned and -run. Increasing these to three (and possibly four) would saddle the entire industry with excess capacity that was entirely of the government's making. Once implemented, the expanded NBN would steer demand away from private backbones and effectively raise the cost for all users. Even if half of government demand hives off from private providers towards the cheaper government backbone, costs become higher for the telcos' private customers, including business. Ironically one of those to suffer would be government itself. For it is virtually certain that government agencies will nonetheless continue to spend the rest of their telecommunications budgets (e.g., half of their spending on landline calls and 92 percent of their cell-phone expenses) on the private telcos' services. Therefore they too become affected by higher costs. Hence it is not even entirely assured that total government telecoms costs will even be reduced.

Anticipating congestion

The possibility of congestion (leading to slow connections) is likely the only valid economic rationale for an extra backbone (not to mention two), and possibly some allowance for redundancy in an emergency. At present, however, no congestion is in sight. Quite the contrary, current fiber-optic pipelines are hugely under-utilized, implying zero marginal cost of additional traffic.

Even assuming the point of congestion is reached, however, there is no reason to doubt that private telcos would scramble quickly enough to absorb excess demand, as they did upon inter-connecting the country under competitive pressure. To be sure, there will remain missionary areas that remain unconnected. But can government do the job better on its own?

Concentrating on government's core competence

From the 1990s up to until recently, the government seems to have adhered to the concept of "core competence", which implies progressively outsourcing all non-core needs to those who specialize in such non-core needs. Government agencies that have followed this formula have realized good savings. Private concessionaires now run canteens in state offices. Property security is now contracted out. Government has left (or is leaving) to the private sector the task of direct services-provision in power-generation and transmission, airlines, telephony, tollways construction, and all sorts of industrial ventures. In the meantime, government concentrates on its more important regulatory task of preserving competition; then rather than bother to run a single firm, it comes to influence the entire sector. This strategy has clearly yielded more success than the previous one: the most iconic is the outsourcing of water distribution services themselves to private concessionaires in Metro Manila.

But the loan-powered versions of NBN and CEP require the government to abandon this painfully-won strategy and resurrects the zombie of a government-run communications system (recall Telepono sa Barangay!). Can this be sound?

Preserving flexibility and keeping pace with technical change

The ICT sector is characterized by extremely rapid technological change. Competitive market pressures will typically prod firms to invest in cutting-edge technology. But it is precisely such competitive pressures that are suspended in a government-owned facility. Hence there is real danger that the expanded NBN, particularly its last-mile segment, will be saddled with increasingly obsolete technology that government users themselves will progressively shun in favor of market providers. Alternatively, if government makes the use of the NBN compulsory in order to validate its past mistakes, e-Government program could shrivel from sheer inefficiency. This is one lesson the former USSR failed to learn and which hastened its demise.

The pace of technological advance is admittedly different for various segments of the ICT sector. It is probably least rapid in the backbone segment, where the best opinion still considers optic fiber the gold standard and obsolescence may come only slowly. It is probably more rapid in the (wireless) last mile distribution segment of the network.

At any rate, once NBN is on stream, government agencies will be largely wedded to a state provider from which they cannot readily shift. “Unfree to fail” government or quasi-government entities have little regard for quality of service. Nor is there an incentive for technological change. The specter of “old PLDT” monopoly and its associated abominations loom very large. A good idea of how it will be run is provided by the career of Telof itself. Here the “soft budget constraint” rules, and deficits and state subsidies are almost inevitable. Government ends up paying higher for low quality service.

To reiterate, flexibility, or the capacity to switch suppliers is an enormous competitive advantage. The government is vast, its needs myriads and constantly changing. The mismatch between demand and supply is the inevitable of central procurement.

State provision and market failure

The bloated NBN and CEP projects revive the deeper issue of state provision and ownership of infrastructure. The argument for state provision and ownership generally turns on whether the good or service in question is substantially “public” in nature, that is, whether its benefits are largely social and cannot be appropriated by private entities

that provide the financing. In practice, "publicness" is defined by how well or how poorly the market provides that good. A truly "public good" will be either underprovided or not provided at all by market forces alone. There is, in other words, a "market failure" for public goods, which provides the rationale for government provision. More than two centuries ago, Adam Smith described the third task of a sovereign that of "erecting and maintaining certain public works and certain public institutions which it can never be for the interest of any individual, or small number of individuals, to erect and maintain because the profit could never repay the expense to any individual or small number of individuals, though it *may* frequently do much more than repay it to a great society" (*Wealth of Nations*, Bk. IV, Chapter IX). But even non-provision is only a possible marker of substantial publicness and market failure. It is not a sufficient condition for intervention. Smith's use of the world "may" is a nugget of wisdom. Government has, indeed, more often than not, worsened rather than improved matters by precipitate intervention.

Private non-provision as a non-rationale

But how do the NBN and the CEP backbones score as public goods? They fail because, in fact, the private sector has provided not one but two such backbones: the PLDT's loop-type fiber optic backbone, which anchors the signal coverage of the entire country, and the Telecphil fishbone-type fiber optic backbone, which is owned and employed by a consortium of telcos. All smaller local telcos (Paptelcos) are hooked up to either of these two backbones. Even the local area networks of large government agencies are already currently connected to either of these backbones, for national and global connectivity. Moreover, all the advertised broadband services of NBN and CEP (data transfer, VOIP, teleconferencing) are "conduitable" and are in fact on offer by the telcos via these backbones. Private telcos could even provide the "last-mile" WiMAX services envisioned by NBN and CEP. So, there is clearly no market failure on this account.

Strategic congestion as a non-rationale

Another argument for the public provision of an additional backbone is the "strategic congestion" associated with existing backbones. (This is distinct from ordinary congestion which can happen due to unforeseen spikes in demand.) Demand grows and

may outstrip capacity. Unlike the power industry, where the lead-time for expanding capacity can take several years, the local ICT backbones use fiber-optic technology, which allows for easy upgrades when excess demand looms. But that may not happen. Strategic congestion can occur when the provider refuses to raise capacity, despite unserved demand, to justify raising prices. This is possible, of course, but not likely where competition is rife and market share is a battle zone. Hence, no market failure here, either.

Back-up inadequacy as a non-rationale

Another reason given for state's provision of an additional backbone is that it serves as back-up for emergencies and system failure. According to this argument, the private sector may underestimate the cost to society of systems-breakdown and provide backups that are inadequate to the extent that they reflect only private cost. In fact, however, the private sector backbones do have emergency back-up systems (e.g., PLDT's Digital Radio System (DRS) in case of double breakage of the loop, plus Telecphil's own backup). In addition to which is the fact that the two backbones do serve as back-ups for each other. It is the NBN by contrast that does not envision a built-in backup, so that it is government ultimately becomes still reliant on private telcos for back up, rather than the other way around.

Pre-empting predatory behavior as a non-rationale

Because monopolies can always be abused to gouge the public, it is sometimes argued that an additional provider is needed to foil such predatory behavior on the part of the current private providers. This viewpoint would be stronger if there was only one backbone. In fact, however, there are not one but two backbones already in competition. Furthermore, the NTC does monitor interconnection contracts so as to prevent predation. On the other hand, one is hard-pressed to recall when the state-ownership approach has ever worked to foil cartel behavior in other circumstances. The government long defended its ownership of PNB on this account. In the event, PNB became the chief financier of "crony capitalism", working to the benefit of cronies but to the monumental loss of the nation.

Upon closer inspection, therefore, the economic logic of an enhanced NBN, as well as that of an enhanced CEP, will be found weak and wanting. The question then begs to be answered why the government should insist on pursuing it with such zeal and urgency, against the serious advice of experts in the field, and in contravention of its own pronouncements and the wisdom of its own experience. And if a few loose lips were then prone to telling stories of crony capitalism and people believed them, who should be blamed? The government will have brought it on itself.

Some real ICT tasks for government

The real tragedy is that while government wastes time and effort playing games – and defending its presence – in areas it should not be, it could be doing a lot more good in places where its influence really matters.

Last-mile connectivity. The biggest hurdle government needs to confront is "last-mile connectivity" – the hook-up of government offices and entities to the base stations, either by wire or by wireless signal. The simple problem is that of enabling such government entities to receive and send these signals. The social benefits are substantial but the players (government administrators) do not seem to have the incentive to make the connections happen. In sparsely populated rural areas, wireless connections can be provided to link with the legs and nodes. There is no need to reinvent the wheel. This, by the way, is simply a re-embrace of the original (pre-China loan) CICT and DOTC road maps. Indeed, "less is more".

Government purchase leverage. Government as a sizeable buyer of telecommunications services should, where feasible, pool its telecoms purchases and have private telcos bid for these purchases to lower its cost. Government can and should simply play the market better and smarter, instead of thwarting and subverting it. When it has procurement leverage, it is socially beneficial to use it to lower cost. For this, one does not need an NBN.

In other jurisdictions, government has always fully utilized the leverage provided by its potential role as "anchor tenant". Given the size of government and declining unit-costs in the backbone industry, government ICT usage itself can be used as a powerful

bargaining tool, since the threat of migration of government custom to competing providers would cause unused capacity and seriously dent the bottom-line of its current providers. In other jurisdictions (e.g., North Carolina's Integrated Information Network), government usage provides the critical mass that makes feasible the private provision of broadband services to entire regions [Office of the State Controller 2002]. In the Philippines, rather than serve as anchor tenant to a new broadband network, government may simply assert its primacy with the current providers, using its custom as leverage to obtain lower rates.

The fact that there are two current providers is what lends the threat to transfer government custom the character of something more than an idle threat. This is also what the example of other jurisdictions has shown: in April 2005, for example, the City of Minneapolis filed a lawsuit against its previous provider, Time-Warner, for using capacity dedicated by contract to the City of Minneapolis. Minneapolis then put out a bid for alternative providers [New Rules Project 2006]. This shows the City of Minneapolis asserting its right to change dance partner when quality is inadequate. Flexibility and accountability are served. By contrast, such a recourse would be unavailable when the government itself acts as entrepreneur, since it cannot abandon its own facility and typically strives to validate even its past mistakes.

System security. Even today, the country's ICT infrastructure is threatened by extortion-motivated lawless elements that destroy private telecoms relay stations on a regular basis. The NBN and CEP backbones will only add stationary – perhaps even symbolically preferred – targets to such elements. These almost certain damages add to the future costs of the project and, of course, not covered by any loan from China. State resources would be better used in beefing up the security cover for existing relay stations. It militates against sense to begin a project that increases the objects to be guarded – stretching the government's resources even further – without a guaranteed increase in returns or efficiency.

Conclusion

On almost all counts we have examined, therefore, no sound basis exists for the loan-enhanced NBN. But why would the government pursue it anyway?

Just as a slave can get used to his chains and actually fear freedom, it is said that poor countries cannot afford to be rich. That is, poor countries are too engrossed in the "poor ethos" and find it difficult to escape from it. Their short time horizons prevent them from discerning the large future payoffs from postponing consumption. Thus, they tend to splurge today. In other words, poor nations are poor because they cannot handle affluence.

The NBN and CEP stories suggest that the Philippines is poor for a similar reason. The capacity to command a credit line is a fleeting mark of affluence. If, however, a credit line prompts an irrational shopping binge, that is a sure sign of the poor ethos in action. That person is destined for bankruptcy.

Beyond the resources directed to NBN and CEP, a real threat to public resources in general now exists. The mother-of-all good news in the Philippines has been the fiscal consolidation since 2004. The government is collecting more revenues thanks to RVAT, and a consolidated fiscal surplus is looming. But more revenues make sense only if additional resources are spent judiciously and effectively. Unfortunately, many in the political establishment have taken these promising numbers as a license for them to take what they believe is their well-deserved share. Even now wooly schemes are being spun that warm political hearts but which repel any rational mind.

The country could certainly use Chinese ODA to great effect. But the "poor ethos" stands in the way. Prudence dissolves before the blandishments of easy credit. The bloated NBN and CEP are parables whose moral cannot be reiterated enough.

The only backbone the government needs today is a moral one; not fiber optic but *fibre politique.*

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