Biometrics to prevent electoral fraud

MAHBOOB UR RAHMAN

O civilian government in Bangladesh has taken over power from another civilian government through an undisputed electoral process. The demise of each democratic era has followed from the controversies and disputes over the results of the general elections held in 1991, 1996 and 2001. There is a general concern as we approach the 2006 general elections, that history must not repeat itself. The 2006 general elections will have to be successful and free from controversies.

With the parliamentary election about one year away, Election Commission (EC) is scrambling to purge polling places of the fraud and multiple voting, identity theft and vote miscount and other voter identification related problems that plaqued our earlier contests. Only way to combat these voting fraud related problems is to introduce computer based Biometric Voter Identification System (BVIS) in the next general election.

Although EC claims to have a database or voter lists of 75 million voters, they have no means of accurately identifying these voters during the polls. The EC database only contains information such as name, address and voter ID number which is inadequate to identify the genuine voters. In fact, a proper voter database should contain information on biometric identification such as photograph, fingerprint or retina scan. As EC is planning to go for fresh voter list, they should ensure that proper database with biometric information such as fingerprints and facial images is included in order to conduct a fair election in the next polls.

Large-scale biometric implementation is neither complicated nor time-consuming or too expensive. It is estimated that total cost to implement BVIS for 30,000 voting center across the country should be under US\$50 million only. This is only a drop in the bucket compared to the mammoth cost of conducting a national election. With the support of some of our international donors like the United Nations, the USAID, the British Government, and the European Union, the Election Commission can easily implement this electronic voter registration and biometric authentication system for our next general election. Even after the election, thousands of these biometric authentication servers, PCs and scanners can be either donated to schools or utilised for large-scale applications such as national ID card and driver license programme, education board examinations, secure passport or visa issuance, and border entry/exit

The system will provide the EC with an effective and affordable solution to substantially reduce or even completely eliminate the potential fraud in the election process by ensuring the integrity of the 'one person, one vote' concept.

The Opposition parties crying for election reform should rather urge the Election Commission to seriously consider this suggestion to plug the loopholes for election fraud through the latest facial and fingerprint biometric technology. The most important reform should be to implement a "fool-proof electronic registration, voting, and counting system" for the 2006 general elec-

So let's look at what is biometrics and how BVIS can play a major role in ensuring fair electoral process. and how it can be implemented for our next general election:

Why BVIS is essential for next election?

The system will ensure effective and fool-proof voter registration, voting, and counting procedure that no longer requires identification (ID) cards. Instead of IDs, identification of voters will only be made through a computerised facial and fingerprint biometric system.

This computerised biometric authentication procedure can be easily developed to adapt to the Bangladeshi voting system, thus, it can provide a solution to all poll

will be scanned for prints. These data will then be filed at the EC central database. The entire voter population of Bandladesh can be enrolled over a 40-day period with biometric systems as it was done for 60 million voters of Nigerian presidential election in 2003.

Using the latest facial and fingerprint biometric technology, the system will not allow one person to register more than once as computers in every constituency will be able to recognise the face and the fingerprint of all those who had already registered. After the final match and compilation, if any multiple registration is found, EC can take punitive action such as -take away the right to vote of the multiple registrant and/or him/them

Electoral fraud is a grave and growing threat to our democracy! It seems that most of

will first pre-register the voter to identify him as a qualified voter. Voter will be asked to scan his right thumb or left thumb to be scanned with a finger print scanner and a facial photograph will be taken of the voter with a digital camera at the

3. The BVIS will then do a one-toone and one-to-many match with the fingerprint and facial image of the voter against the distributed voter database installed in the biometric identification server at the polling station. If the BVIS check is okay and ensures that the voter has not yet tendered his vote, the voter is then given his ballot paper to enter the voting booth to cast his vote. The entire verification and match takes only 15 seconds or

the people crying out for election reform in Bangladesh are on the opposition. Why should this be? Election fraud has just as much potential to harm the party in power as the parties in opposition. What is important is that the country today must protect its right to vote orderly and honestly, and this technology can help us achieve this goal.

problems, particularly fraud and counting irregularities. The system can be designed to combat regular election related problems that have plagued past Bangladesh General Elections such as flying vote, ghost voters, vote buying, dummy voters, multiple registrations, and slow voting process due to manual voter authentication, etc.

How will BVIS work?

BVIS can be utilised in three major areas in our election process:

- Registration and identification
- Voter authentication during election, and

3. Accurate vote counting or tally process The whole procedure is simple During the voter registration, the

computer will take the picture and fingerprint of the voter for identification and filing purposes and include them electronically in the EC voter list. When the voter votes in the polling station during the election, the computer would again take his photo and fingerprints and compare it with millions of photos and fingerprint files in the list. Once the system recognises and identifies the voter, only then would he be allowed to vote.

When voting hours finally come to a close, the computer would then print the polling station's tally sheet. The computer will also securely store lists of voters who actually came to the polling station to an optical CD media which will be later used for vote recount or finding a match for potential multiple voters with other polling centers.

There's no question that this technology is what we need to eliminate all manner of cheating like the fraud vote, floating voters, and ballot manipulation. Candidates do not have to fear this technology and in fact appreciate it because it would cost them less to run for office once the system is in place.

Voter registration process From the voter registration forms or directly from registrant, basic personal information such as name, address, birthday and gender will be entered into the voter registration computer screen. Voter's photo will be taken by a mini camera installed on the computer itself and his left and right thumbs to prison. However, EC has to ensure that enough media publicity to inform the citizen of the new voter registration system and the punishment for the multiple or fraud regis-

This eliminates the first electoral irregularity -- floating and proxy or "ahost" voters.

In the actual voting, the same rule applies. Through the face and the fingerprint, the computer will be able to recognise the qualified voters in each constituency and ensure that they vote only once.

The voting process with biometrics I D

Below you can see the "BVIS stepby-step" process of voter identification using the biometrics technology during the general election. Most BVIS machines use similar procedures, with variations in the secure media used to activate the machines and the procedures for retrieving information. All BVIS machines will include backup batteries, so they can run for few hours during a power outage. Biometric scans stay in nonvolatile RAM, so they are not lost if the

1. Voter arrives at polling station and lines up for their perspective

2. Polling officer in each booth

Polling

Booth 1

Polling

Booth 2

Polling

Booth 3

Polling

Booth 4

Polling

Booth 5

4. The BVIS will keep records of each voter entering the polling booths with their fingerprint, facial image and time-stamp of entry.

5. After the closing of the poll the BVIS will print out the Tally-Sheet or store the poling station data into a secured optical media to be compared later with other poling station to find possible match for multiple voting. The illicit voters involved in multiple voting will then be prosecuted according to EC law.

6. The BVIS ensures a proper vote count and the voter tally can be compared with the number of ballot in the voting box for that particular poling center, to ensure that there is no discrepancy. This will prevent any manipulation through ghost voting to increase the number of vote in any particular center.

It is important to emphasize that this BVIS is not a full fledged evoting system and it will only protect us from fraud voting to ensure onevote for one-person, thus, the actual ballots needs to be protected from any kind of manipulation from unscrupulous EC polling officers.

THE TECHNOLOGY: What is biometrics

Polling

Standalone PC with 1:1 or

1:M Identification Engine &

Template Storage

Biometrics Identification System for the Polling Station

authentication? Biometrics are automated methods of recognising a person based on a

geometry, handwriting, iris, retinal, vein, and voice. Biometric technologies are becoming the foundation of an

physiological or behavioral charac-

teristic. Among the features mea-

sured are; face, fingerprints, hand

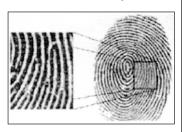
extensive array of highly secure identification and personal verification solutions. As the level of security breaches and transaction fraud increases, the need for highly secure identification and personal verification technologies is becoming apparent.

A typical biometric-based authentication applications may include biometrics input device, workstation, network, and domain access, single sign-on, application logon, data protection, remote access to resources and transaction security.

On the other hand, authentication is something you have, something you know, and something you are when you are when you and biometrics. Right now only authentication we have, involves human error and unconfirmed verification. Technology has always been there but the idea of using this technology for voter authentication was never

The idea behind whole voter authentication with biometrics is to eradicate fraud and multiple voting. People with ill intention do not like to get registered with face and fingerprint, making it a very discouraging system for the fraud voters.

Conclusion Electoral fraud is a grave and



arowing threat to our democracy! It seems that most of the people crying out for election reform in Bangladesh are on the opposition. Why should this be? Election fraud has just as much potential to harm the party in power as the parties in opposition. What is important is that the country today must protect its right to vote orderly and honestly, and this technology can help us achieve this goal.

Mahboob ur Rahman is Managing Director of BASE Limited.

on Holding

Area

Queue 1

Queue 2

Queue 3

Queue 4

Queue 5

After the Asian crisis in 1997-1998, most of the crisis-affected countries switched from exchange rate based

monetary policy framework to the inflation-targeting monetary policy (where interest rates are used as key

monetary policy instruments to stabilise the economy). Accordingly, interest rates were increased (again according

to IMF suggestion) to curb currency depreciation in those crisis-prone countries. When the nominal interest rate of a

country is changed because of a rise in expected real interest rate, the local currency of that country appreciates.

However, when the change is instigated by a rise in the expected rate of inflation, the domestic currency depreciates,

Disengagement's fatal flaw

The conventional wisdom in Israel is that Sharon finally realised the world had changed and recognised the constraints of Middle Eastern politics and demographics. The truth is that reality did not change. What did change was Sharon's understanding of reality -and his belated acceptance of demography as the be-all and end-all of Israeli polity.

S disengagement a strategy? No. Israelis are entitled, after sustaining several untenable visions from both the right and the left, to at least get an idea of what lies 10 years ahead, such as where the borders of Israel and of "Israeliness" will be demarcated. By launching the disengagement from Gaza, Prime Minister Ariel Sharon proved that he may know which path Israel needs to follow -- comprehensive separation -- but he is incapable and unwilling to actually go

Still, Sharon deserves credit. What Israel is doing in the Gaza Strip is a timely step in the right direction for Israel: to separate itself -- and, eventually, entirely disassociate itself -- from 1.2 million Palestinians in Gaza, many living in abject poverty in one of the world's most densely populated areas. Given that by 2015, Palestinian Arabs will outnumber Israeli Jews there, disengagement is recognised by a majority of Israelis as an imperative if Israel is to remain a Jewish democracy.

Israel cannot and should not control the Palestinians, yet the Palestinians cannot govern themselves and provide security to their Israeli neighbours. So why should Israel be held hostage to Palestinian political development? Get out, cut your losses and do it on a costeffective, non-ideological basis.

But the current Israeli disengagement does not stem from, nor is it linked to, a coherent long-term strategy. Therein lies its basic flaw.

There are no follow-up plans, no negotiations and no further disengagements. In diplomatic terms, there is a conspicuous absence of a "day after" policy, which means that, in and of itself, disengaging from Gaza will not profoundly change Israel's strategic and demographic situation vis-a-vis the Palestinians.

Assuming the disengagement is completed by the end of September, it will very likely lead to a political crisis by November or December,

and to subsequent elections in Israel that would serve as an excuse to avoid devising any day-after strategy for at least six to 12 months. That has

already been put in motion by the resignation of Finance Minister Benjamin Netanyahu, who no doubt will challenge Ariel Sharon for the Likud Party leadership.

That leaves a major question:

what is Sharon's grand design? Is it only demographics by subtraction (of 1.2 million Palestinians from a total of 3.5 million in the territories)? Throughout his political career. Sharon has often been accused of being a supreme tactician and a poor strategist, either by design or by default. Frequently, he was characterised as having a nationalsecurity concept more suitable to a brigade commander than a statesman. Controlling a ridge and the dotting of the West Bank with Israeli settlements -- somehow thought to be able to prevent Iraqi tank formations from invading through Jordan -- seemed to him to be of paramount importance, while demographic and geopolitical realities were ignored.

Sharon believed that Israel will face a conventional existential threat from an "eastern front" and imagined a massive Israeli presence in the West Bank deflecting such an attack. His was -- and, to an extent, still is -- a military view of national security. These characterisations of

Sharon are wrong. In fact, by the late 1970s he came up with a significant strategic idea that has guided him since: Jordan is Palestine, especially since more than 60 percent of its inhabitants are of Palestinian origin. Between the river and the sea, there is no room for two economically and politically viable independent states

Therefore, Israel is destined to live in a permanent state of war or, at best, a protracted low-intensity

While publicly committed to President George W. Bush's "vision of two states" of 2004. Sharon's dealings with the Palestinian Authority in the last four years clearly indicate that he is out to undo the 1993 Oslo accords and make sure that a territorially contiguous Palestinian state, as offered by Prime Minister Fhud Barak at Camp David in 2000, will never be established -- not on his watch. The Palestinians will one day have Jordan and their cities in the West Bank as their state. But a Palestinian state on 95 percent of the West

Bank and Gaza will not materialise. The conventional wisdom in Israel is that Sharon finally realised the world had changed and recognised the constraints of Middle Eastern politics and demographics. The truth is that reality did not change. What did change was Sharon's understanding of reality -and his belated acceptance of demography as the be-all and endall of Israeli polity. This is not about who owns the land, but about saving and strengthening the Zionist enterprise. It's perhaps \$65 billion and 200,000 settlers too late, but better disengage now than never. This is his strategy and, like it or not, it is a strategy.

But Zionism does not stand or fall on the status of the West Bank and Gaza. The ideological and political foundation of Zionism was the creation of an independent, sovereign and democratic Jewish state that would normalise Jewish national and individual life in an international system based, since the 19th century, on nation-states. It

Biblical Jewish empire encompassing most of the Fertile Crescent. By this measure, Sharon's strategy for Israel is one rooted in the past not geared toward the future (c) 2005, Newsweek Inc. All

was never about resurrecting the

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Alon Pinkas, former policy adviser to four foreign ministers, was consul general of Israel in New



Jewish settlers confront Israeli policemen outside the synagogue complex in the Gaza Strip settlement of Neve Dekalim, 18 August. Hundreds of youths were massed on the roof and the balconies of the synagogue, waving flags and banners protesting at Israel's pullout from the Gaza Strip.

Dollar volatility and blame game

M IMTIAZ MAZUMDER

ANGLADESH shifted from "fixed" to "flexible" exchange rate policy in 2003. There are many economic tools associated with fixed and flexible exchange rates. However, the flexible rate is widely attributed to "free float" (where the exchange rate is determined solely by supply and demand) and "managed float" (where central bank may intervene to correct short-term excess volatility). Under a managed float, one can get the benefits of exchange rate flexibility without excessive volatility. Like many other developing countries. Bangladesh has been following a "managed float" as opposed to the wide belief that it follows a "free float" system.

In the past six weeks the price of the US dollar (greenback) fluctuated from as low as Tk 61 to as high as Tk 67, and the Association of Bankers Bangladesh (ABB) and Bangladesh Foreign Exchange Dealers Association (BAFEDA) have tried to implement a so-called single rate for inter-bank dollar transactions to ease the volatile greenback market. However, the single rate could not be executed unanimously because most banks deemed it as interference to the flexible exchange rate. The Bangladesh Bank (BB) has committed to the International Monetary Fund (IMF) that it won't either interfere in the forex market or take any step to bring an end to the continuing dollar crisis. However, a majority of

forex market players considers the initiative of ABB or BAFEDA as an indirect intervention of BB.

demand for the greenback has increased mainly because of rising import growth (24 percent) and weakening export growth (15 percent). The rising oil prices in global markets also accounts for an additional \$500 million import bill. The rising value of dollar also contributes to drastic increases in import prices. Increase in private sector credit, especially during the last six months of fiscal year 2005, has also been blamed for recent dollar crisis. However, no one has questioned the direct or indirect effect of government's borrowing. It is reported that Tk 400 million was borrowed during the last five

days of fiscal year 2005.

IMF is arguing that it warned BB at the beginning of second quarter of 2005 to increase interest rates to maintain price stability and discourage private sector credit expansion. This policy suggestion was a U-turn by IMF from its previous position of advocating low interest rates. Accordingly, BB reduced its money supply since last April and asked commercial banks to raise interest rates. Inflation rate increased from 6.24 (April) to 6.35 percent (May) after the introduction of IMF-induced interest rate policy. It subsequently increases to 6.9 percent in late July. Surprisingly, after the backdrop of recent dollar crisis, IMF began to criticise BB on the ground

It has been argued that the

that the tighter monetary policy was adopted too late IMF also slammed BB for its disappointing role in handling the greenback scarcity. However, IMF wants that neither the government nor BB should interfere in forex market. IMF recently reported that "in view of external sector developments and the unfolding impact of the MFA phase out, an orderly market-based depreciation of the taka is likely and is consistent with the need to maintain macroeconomic stability and improve external competitiveness." At present, IMF suggests that BB should actively use open-market operations and develop liquid inter-bank and treasury markets to ensure that the market maintains adequate liquidity. Now, IMF suggests that BB should

as it is the case in Bangladesh now.

market-based manner. The governor of BB also admits that the current volatility in the greenback is not unexpected under a floating exchange rate

allow interest rates to increase in a

regimen. However, he reveals that there should be rational coordination among monetary, fiscal, and trade policies to hold back inflation and currency devaluation. Interestingly, the ex-deputy governor of BB (now the managing director of a commercial bank) recently blamed BB for its invisible intervention to control the open market operations of exchange rate mechanism that led to recent volatility in dollar prices. It has been reported that the central bank officials called the commercial banks to lower the guoted rate of dollar. However, the governor of BB denied this allegation on the ground that this kind of intervention is not sustainable. He further argues that if the market fundamentals are correct and fair. there will be a gradual adjustment in currency volatility. This evidence raises the question of transparency and accountability of BB either in contributing to or combating the volatility of the greenback. Conceivably, there might be something

peculiar with BB that (among other things) causes recent currency volatility. The policy dilemma of BB is also acute.

Although the dollar market is in turmoil in Bangladesh, the price of dollar has declined in major Asian countries during the same period. The value of dollar declined on August 2 in most of the Asian markets because of renewed concerns about the US trade, budget, and current account deficits and better economic indicators in Japan. Even an increase in federal funds rate (from 3.25 to 3.50 percent) by the Fed on August 9 did not contribute to any fall in major Asian currencies.

The decline in taka against US dollar suggests that the demand for dollar has increased. The first month of fiscal year 2006 experienced a 22 percent increase in foreign currency (\$340 million) through remittances. The net positive inflow of remittances is expected to diminish the current pressures on the greenback.

However, BB refuses to inject dollars into the economy, fearing a long-term and sustained pressure on foreign direct investment, because higher forex reserves assure foreign investors of repatriating their profit. BB also argues that higher reserves are necessary to meet the demand for priority

BB has asked the commercial banks to be cautious and more conservative in opening import related letter of credits (LCs). However, the Metropolitan Chamber of Commerce and Industry has expressed its concern that the limited LCs from the banking sector have led unscrupulous traders to hoard imported goods that already raised the prices of essential goods

The finance minister also joined this blame game by rejecting the claim of any dollar crisis in the country. He said that overcommitment for LCs by some small banks to make quick profit has put dollar crisis. Further, he warned that BB would scrutinise whether these small banks were capable to earn enough foreign exchange to meet the large numbers of LCs that they recently launched. Interestingly, the remarks of the finance minister raise some ridiculous but serious questions: are small banks so powerful to dictate the forex and financial markets in Bangladesh?

those banks under self-created

How dare a small bank opens a large number of LCs that it can't operate and sustain? Is there any central bank in Bangladesh to monitor the rules and regulations associated with LCs? Or is BB simply obeying IMF's suggestion of "no interference" policy in LCs opening. The other comments made by the finance minister in this regard are also inconsistent with

the idea of market economy. It seems that the blame game started from the top of the government. Neither the government nor BB wants to take any responsibility for the dollar crisis. Does BB actually enjoy any autonomy as claimed? The governor says that market fundamentals will bring stability in forex market although we observed that the taka had gradually depreciated by more than 6 percent within six weeks. The finance minister says that forex reserve is low (around \$3 billion or equivalent to 3-months of import bills) and can only meet the demand for most essentials. Unfortunately, we were told exactly the

opposite by the finance minister in

his last budget speech. Ironically, they all failed to admit that the market fundamentals were not fair. The small banks became the scapegoat in this blame game.

After the Asian crisis in 1997-1998, most of the crisis-affected countries switched from exchange rate based monetary policy framework to the inflationtargeting monetary policy (where interest rates are used as key monetary policy instruments to stabilise the economy). Accordingly, interest rates were increased (again according to IMF suggestion) to curb currency depreciation in those crisisprone countries. However, many academicians, including Nobel laureate Joseph Stiglitz, argued that rising interest rates destabilised the exchange rates of these countries by raising corporate bankruptcies and accelerating capital outflows. The introduction of new monetary policy device, in fact, increases the contagious effect. i.e. their currency now becomes more sensitive to the competitors' exchange rate.

When the nominal interest rate of a country is changed because of a rise in expected real interest rate, the local currency of that country appreciates. However, when the change is instigated by a rise in the expected rate of inflation, the domestic currency depreciates, as it is the case in Bangladesh now.

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