AES Technical Breakdowns

The AES Project Calendar was simply too tight and did not leave enough room for the much-needed adjustments. If time was properly allocated for the different test activities, many of the problems encountered on election day would have been discovered and properly resolved.

The Automated Election System held a promise that the process of voting will be a breeze, counting quick and transmission of election reports speedy. Indeed, the results came fast but transmission of election returns from clustered precincts spanned a period of one week, the last transmission having been received by the Comelec server on May 17, 2010 at 9:29 p.m. Was it really fast?

The speed with which the results came out does not reflect the many problems, technical and non-technical, encountered at voting and canvassing centers nationwide.

Rewind

Transmission problems were most common glitches observed in all the field tests and mock elections conducted spanning the period January to April 2010. The failure to transmit was attributed to various reasons, specifically: 1. Weak signal – in Metro Manila?; 2. The terrain which prevented technicians from acquiring satellite signal such as in the case of Lake Sebu; and 3. The difficulty of acquiring a satellite signal due to lack of experience, expertise, or training, such as in the case of voting centers in Batanes and in Pateros. If the transmission problems encountered were at all resolved, this was never demonstrated or at least disclosed to the public.

The field tests and mock elections were marked with other technical problems like paper jam and ballot rejection. The most glaring problem was the ballot configuration stored in the CF cards deployed with the PCOS machines. The problem was discovered only a week before the elections and was attributed to a mistake as a result of the change in ballot design.

These were among the problems that served as a preview of election day problems and difficulties.

D-Day

As predicted, election day was marred with a myriad of technical problems in many clustered precincts. Among the problems observed and reported were[1]:

- PCOS cannot be started
- Auto-shutdowns at any point in the process for no apparent reason
- Ballot rejections
- Paper jams
- Corrupted CF cards causing the PCOS machine to stall
- Transmission problems causing delays in receipt of election returns by CCS laptops
- Non-display of the congratulatory message after each ballot is fed
- Failure of some CCS laptops to print the statement of votes

- The display of erroneous count of registered voters
- Erroneous date and time stamps on the PCOS
- Discrepancies between the PCOS logs and CCS logs
- Ill-fitting ballots in some clustered precincts were encountered, the ballots had to be trimmed at the edges
- Difficulty or inability to detect/acquire satellite signals; machines had to be moved outside of the voting center to detect/acquire satellite signals
- Instances of CCS laptop "stalling" or "hanging"
- Burned battery, reportedly human error – the battery cables were connected incorrectly.
- In the case of CCS laptops, the time it took to upload election returns (file size of 17KB) from the CF Card was exceedingly long

Erroneous transmission of Final Testing and Sealing Election Returns was disclosed by Comelec and Smartmatic.

Transmission Problems

The transmission problems encountered in many clustered precincts were attributed to weak signals in the voting center locations. Cell sites/antennas are an abundant sight in Metro Manila. Yet clustered precincts in the region encountered weak signals despite the options to use different SIM cards from different telecommunications providers. It appears that the modems used were not quality tested for performance. Some PCOS machines were reportedly brought up to the rooftops of school buildings in order to transmit. The modems were reported physically weak as antennas were easily detached from the modem body.

Investigating the Cause

There has been no disclosure if an investigation into the cause of the problems encountered on election day has been done by Comelec or Smartmatic/TIM.

IT Perspective

System quality assurance requires that several tests be conducted on the system before it is rolled out to actual operation. The tests include, among others, unit tests, stress test, integration test, full systems or end-to-end tests. It appears that the PCOS machines and CCS laptops may have been tested individually but independently. But there has been no disclosure on the integration test or end-to-end tests, if any was conducted.

The conduct of an end-to-end test would have been an expensive exercise as it would simulate the whole elections. But from the perspective of an IT project, it is a necessary step before the AES was released into operation. If such a test was conducted, the problems encountered on election day would have been discovered and the necessary corrective actions could have been taken.

SysTest Labs, in its report recommended that "A final complete, dry run through the reporting hierarchy should be executed prior to election day, in order to validate that all necessary components are indeed in place. SysTest's experience has indicated that missing data may not surface until the reporting structure is executed."

Problem Resolution on Election Day

Reports and case studies also reveal delay in the resolution of the technical problems for various reasons:

- Lack of training or experience of the Smartmatic/TIM's technical support personnel
- Slow response by the next layer in the support hierarchy
- Technical support personnel were ill-equipped
- Shortage of technical support personnel

Conclusion

As has been observed by various parties, the AES Project Calendar was simply too tight and did not leave enough room for the much-needed adjustments. It went through several revisions to make it appear that the activities were on track. The lack of training of the technical support personnel in the field is indicative of the need to have more time for the training and preparation of technical support personnel. The same is true for the much needed tests on various components of the AES and as a whole. If time was properly allocated for the different test activities, many of the problems encountered on election day would have been discovered and properly resolved. ***EU-CenPEG Project 3030***

End Notes

1 For details of technical problems observed and reported on election day, see the following CenPEG Case Study Reports: Biliran Province: Probing into a Possible Automated Cheating by Nadja A. Castillo; Caloocan City: IT Manpower Shortage, Transmission Failures & Other Hitches by Ayi dela Cruz; Davao City's Election: A Far Cry From Being Peaceful by Rodellyn Manalac; La Union: More Questions Than Answers by Ayi dela Cruz; Surigao City: Automation Didn't Stop Vote Buying by Rodellyn Manalac; Tacloban City: Gaps, Failures, Glitches by Nadja A. Castillo; and Highly-urbanized Iloilo City Hit by Widespread Transmission Failures, by Nadja Castillo.