Testimony of Andrew J. Chang
Before the Little Hoover Commission
Public Hearing on Data and Technology
(Thursday, 22 May 2008)
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Sacramento, CA

Good morning and thank you for the opportunity to discuss the IT issues that currently face California State government.

As you may be becoming aware, IT issues are difficult to discuss because you will talk to a host of different people and each person tells you that there something different. I am reminded about the fable of the blind men each touching a different part of the elephant and each thinking that they have a different item.

Figure I

IT is similar to this issue in that people think that they have a uniquely different problem and that it is unrelated to the other parts of the IT puzzle. They have a hard time seeing the big picture. As a result “solving” one problem may create another problem – perhaps even a bigger problem.

You have probably heard through a number of different sources what the “real” problem is with State IT. The common things mentioned include, governance, IT terms and conditions, performance bonds, automating an outdated process, too many technical specifications, procurement, too much cost, too little competition, software licenses ownership, etc.

In reality they are all “real” problems, but they are also related.

Figure 2
State IT Life Cycle

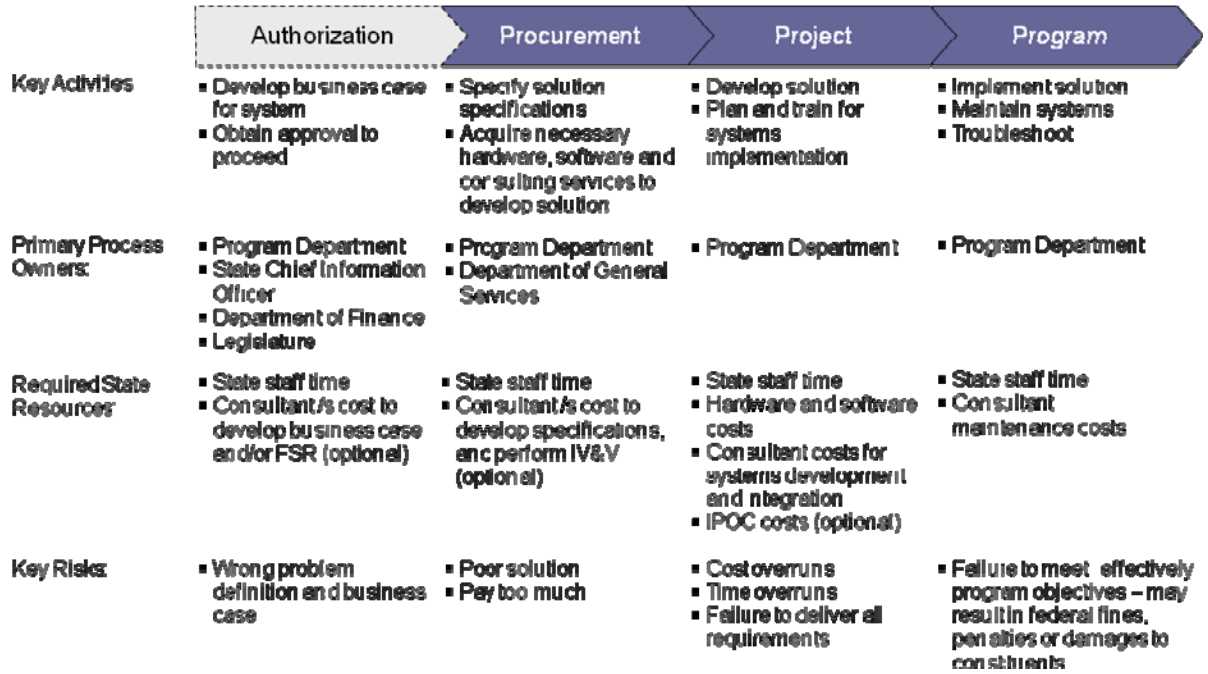


Figure 2 shows the life cycle of State IT projects:

- Phase I deals with the authorization stage in which the business case for the project idea is developed and is authorized by the appropriate control agencies and by the legislature.
- Phase II deals with the procurement stage where the procurement is initiated and completed.
- Phase III deals with the project stage where the actual work to develop and prepare for the adoption of the solution is carried out.
- Phase IV focuses on actually implementing the IT solution.

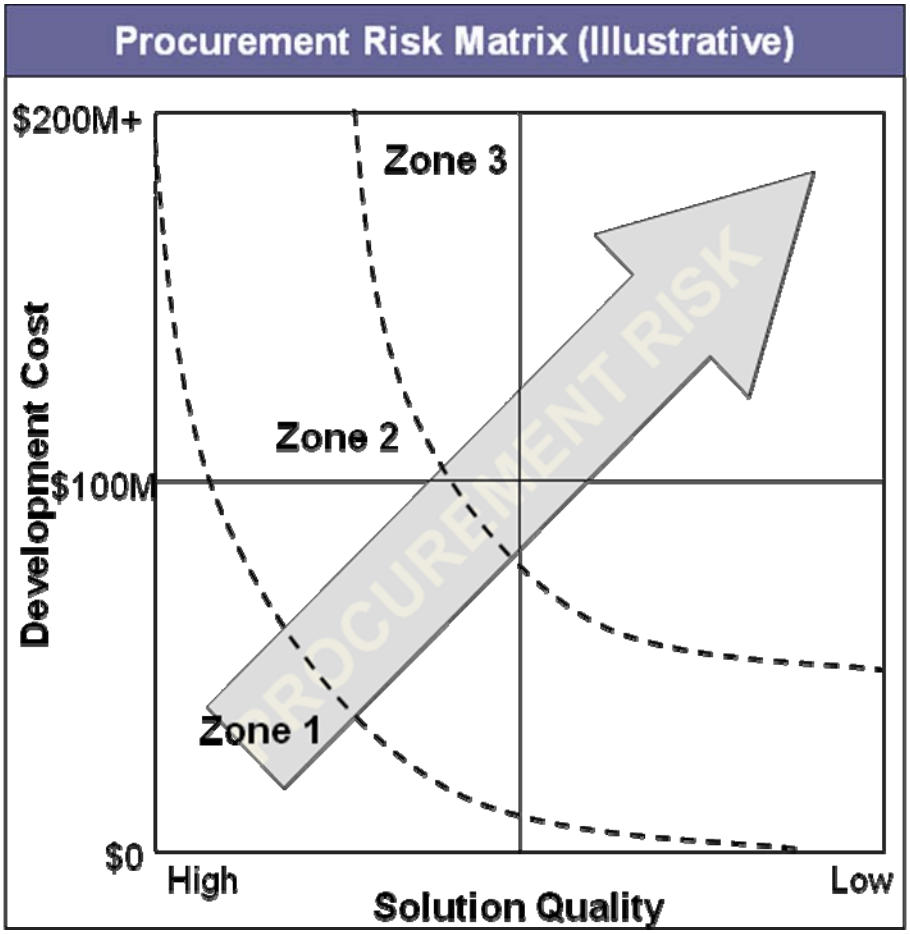
The chart that you see sets things up in a linear format, but in reality it is more of a circle because solutions are constantly being renewed. But it should also be a circle because doing something in one area impacts what happens in another area. For example, adopting a solution with 6,000 technical requirements may jeopardize our ability to procure and implement an IT solution. However, cutting down the requirements may jeopardize the ability of the department to perform the duties required. Another example may involve getting rid of the liquidated damages provision of a contract. Keeping the provision may jeopardize the procurement; but removing it may harm the ability of the department to enforce a timely delivery. The point being made is that particularly for State IT projects, there is a ripple effect that needs to be considered, especially since the dollar values of these contracts are now approaching the billion dollar mark.

That stated I would like to take you through some of the material that I developed while I was at DGS talking about what problems occur during the different phases and what drives those problems.

Problems that occur during the authorization phase are associated with developing a bad business case in other words a wrong technology to a given problem or attempting to solve a non-IT problem with an IT solution.

The problems that occur at the procurement phase focuses around the issue of paying too much or buying a less than optimal solution. It's essentially the same issue as when you buy a car or computer for yourself. You don't want to get the "wrong" car or pay too much for that car. Figure 3 graphically shows you the drivers of that issue. Please note that the data is illustrative. As you can see, procurement risk is a function of development cost and solution quality. If the solution is not expensive or if the solution quality is high, then the risk is lower. On the other hand, the danger really arises when the cost is high and the solution quality is low.

Figure 3
Procurement Risk



Incidentally, I should note that often the State does not know if it paid too much or got the wrong solution until it is well into the program operations phase. Much of the time, the State's measurement relies on indirect measurements such as competition or number of bidders. That is why competition is so important to the state.

There are a number of issues that the State is trying to avoid in the project phase, but the primary focus is to stay on time and on budget. As you can see in Figure 4, these are driven by two factors also – development cost and project complexity. Projects with low development cost and complexity have low risk, such as Meditech which is CDVA's system to track medical records. On the other hand, there are projects that are bigger in scope and complexity, such as 21st Century which is the State's payroll system. Project X is a hypothetical project but it represents the type of project that is expensive and complex – perhaps a custom application rather than a COTS solution.

Figure 4
Project Risk

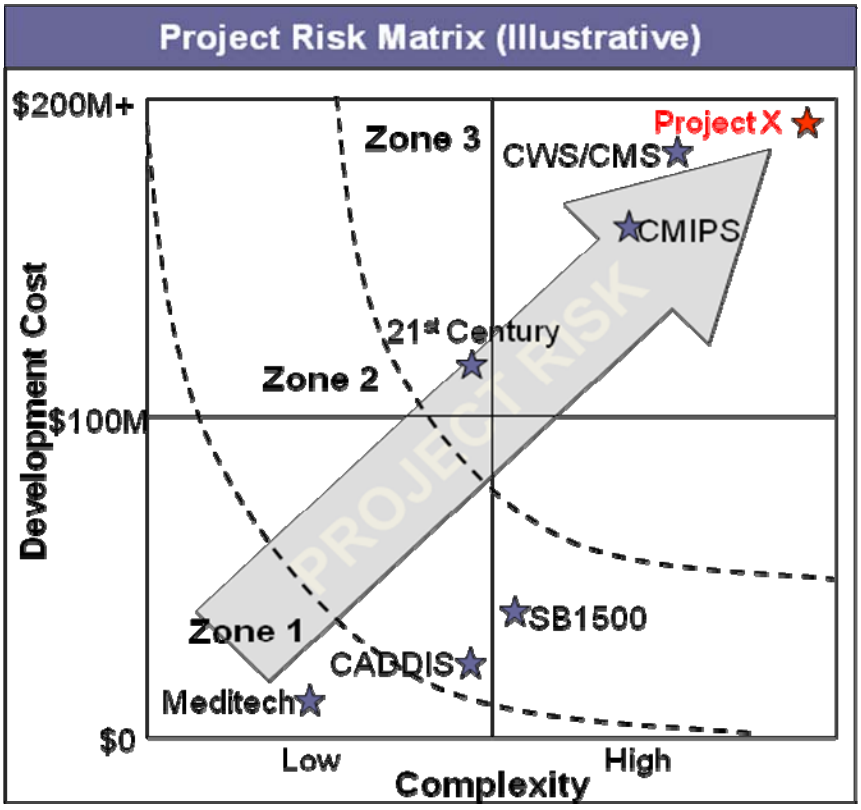
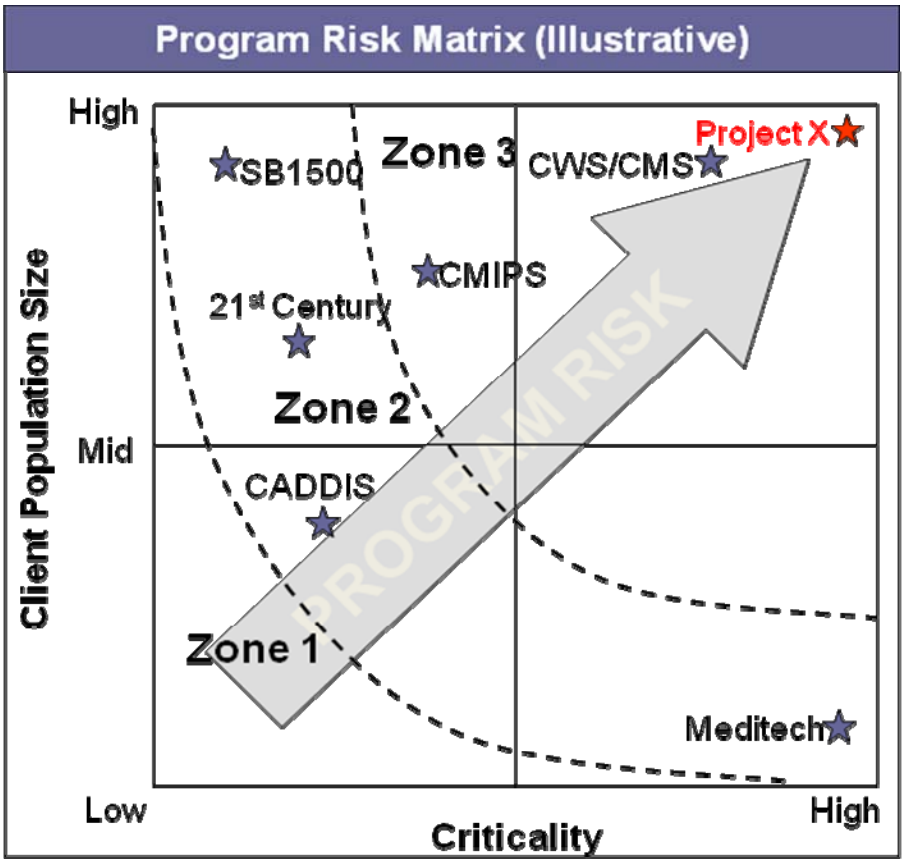


Figure 5 represents the type of dangers that occur during the program operation cycle. Some of these dangers can be reasonably foreseen, such as Federal fines. Others may not be able to be foreseen. As you can see, the danger on the program phase is driven in part by the size of the client population served and the criticality of the operation. For example, even though the Meditech application does not serve a large client population, the function is very critical – this

means that it involves life and safety issues. On the other hand, 21st Century serves a larger client population, but if it fails, the only real repercussion is that state workers receive don't get a pay check. Failures on either Meditech or 21st Century is bad, but the stakes are very different.

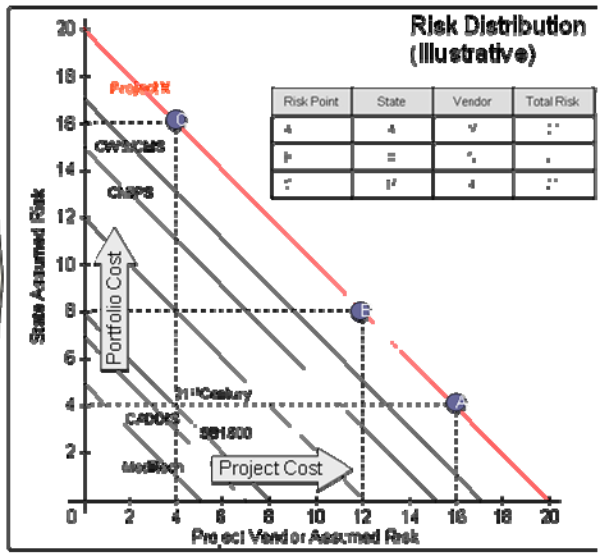
Figure 5
Program Risk



What does this mean? I refer you to Figure 6. Hypothetically, all these issues can be added up and totaled, per Figure 6 below. There are two things to note. First, projects have different total risk. Second, it is distributed between the vendor and the State. On point A, the vendor assumers 16 and the State assumes 4. On point B, the vendor assumes 12 and the State assumes 8. On point C, the vendor assumes 4 and the State assumes 16. All add up to 20. As you can see, the risk distribution is a zero sum game.

Figure 6
Risk Distribution

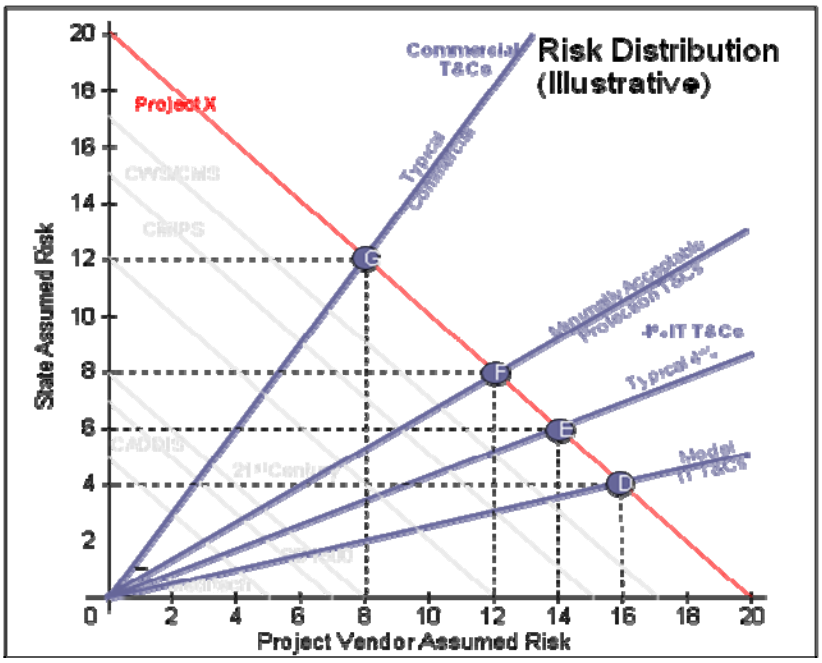
Risk Summary (Illustrative)				
Project Name	Procurement Risk	Project Risk	Program Risk	Total Risk
Project X	8	6	6	20
CWS/CMS	6	6	5	17
CMIPS	5	5	5	15
21st Century	4	4	4	12
SB 1500	3	3	2	8
CADDIS	3	2	2	7
Meditech	2	2	1	5



One other note, if the vendor assumes the majority of the risk, the project costs must reflect that risk. On the other hand, if the State consistently assumes the risk, the portfolio costs will increase. This means that the State will eventually have to absorb costs of failed projects.

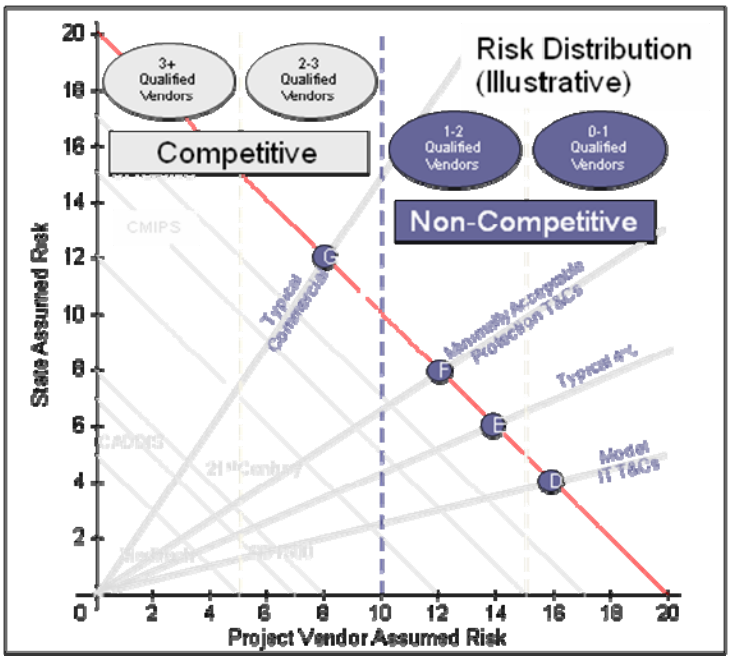
How does the State protect for these risks? I refer you to Figure 7. Typically, protection is reflected in the contract. Figure 6 graphically represents how risk is distributed. Point D reflects the point that uses a State model IT contract. This reflects a point where more risk is provided to the vendor and the state assumes less. Points E and F reflect a modified State contract, typically referred to as a 4% contract which typically lowers risk to the vendor and increases risk to the State. The State typically uses these contracts for large contracts. Point G reflects a typical commercial term contract which, I think, reflects more risk to the State and less risk to the vendor.

Figure 7
Contracts and Risk Distribution



The flexibility to respond is an important issue. As you can see in Figure 8, choosing a model contract would only yield 0 – 1 vendor, whereas using a 4% contract would yield 1-2 vendors for a contract. As you can see, using a Commercial contract would yield even more bidders.

Figure 8
Trading Protection for Bidders



The examples I used in here are illustrative, but I hope that your take away is that there are relations that need to be addressed in whole and not in part. The big picture is what needs to be focused on and quick fixes may create more of a problem than the problem being fixed.

I will be happy to answer any questions.