The Economics of Software Performance Engineering

Making the Business Case

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Making the business case

- You will need to prepare the proper materials for those who will be making the go/no-go decision
  - Understand your audience
  - Do your homework
  - Convince a sponsor

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Understand your audience

Who do you work for?

A) I don't know, I've never seen them
B) A bunch of boneheads
C) Investment bankers

The people that you work for speak, think, and dream in a different language. It is the language of the investment banker. The language of the accountant. As you propose to move performance evaluation earlier into the development cycle, you most assuredly will get resistance. That resistance may look like ignorance to the skilled technical thinker, but in fact it is not ignorance at all. It is the natural reaction of an accountant. Why should I invest...I don't see the return

The tools of the executive

- The people that you work for think in the following terms
  - Profit & Loss Statements
  - Risk assessments
  - Revenue
  - Cost
  - ROI
  - Customer satisfaction

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What you are feeling is as simple as a communication problem. Since you are the one holding the great idea and they are the ones holding the checkbook that can make your dream a reality, its your job to learn how to communicate. To do this, You have to learn to speak their language

You see if you approach an executive with this proposal and you speak in you language....Jprobe, Atomics, Utilizations,.... Any argument you give will fall on deaf ears, and you will walk away muttering something about the boneheads that run the place. If you approach them with the economic argument why they should proceed. I guarantee they will listen. The burden is on you.

Do your homework

Put some science behind it!

- The business case
  - Economic
  - Benefit analysis
  - Risk assessment

- The details
  - Technical
  - Process impact

Before you approach any executive with SPE, do your homework.

Start with a heuristic evaluation of the help desk calls.

Quantify the difference in the cost of a feature related issue and a performance., Figure out what you are spending supporting performance issues. Determine the costs associated with SPE, How does it fit into the process. You will have to have this well thought out . The person with the plan wins. Especially when the economics are behind it.

Example – build the cost benefit model

One time cost	$		Tangible benfit	$
Load driver			Cost avoidance	
Desktop			Help desk	
SUT			PE prod support	
Education			Refactoring	
			Issue escalation	
Total	$	-	Total	$	-
Recurring cost	$		Intangible benefit	
Salary				
Software contract m				
Hardware maint				
Total	$	-		

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This is an example layout for making the economic case. The layout was taken from the book "Making the software Business Case" by Donald J. Reifer. We have found that this is a easy layout for making the case, and there is an accompanying reference book. The issues that are in layout will be your actual case. Others on the panel will discuss in detail the chart of accounts.

Filling in the model

Help Desk		
Number of preventions/ yr		150
Estimated helpdesk / perf call	$	1,500
Direct help desk costs	**$**	**225,000**
PE production support		
Prod support / yr	$	99,000.00
Cost per call	$	800
PE production avoided	**$**	**120,000**
Refactoring		
Architectural issues/ yr	1.5	$ 500,000
Design issues / yr	12.0	$ 150,000
Code issues / yr	137	$ 200,000
		$ 850,000

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When filling in the economic analysis you need to find all of the costs that will incurr as well as the costs that you will avoid. Examples of the costs are the costs at the help desk, the costs that are in production support, and refactoring code that has hit the field. Determine your costs per issue and determine the number of issues.

Filling in the model

One time cost	$		Tangible benfit	$	
Load driver	$	150,000	*Cost avoidance*		
Desktop	$	18,000	Help desk	$	225,000
SUT	$	200,000	PE prod support	$	120,000
Education	$	10,000	Refactoring	$	850,000
			Issue escalation	$	150,000
Total	**$**	**228,000**	*Total*	**$**	**1,345,000**
Recurring cost	**$**		**Intangible benefit**		
Salary	$	230,000	Performance issues are varaible- frustration		
Software contract maint.		25,000	Meet customer system expectations		
Hardware maint		30,000	Customer lost productivity liability		
			SLA's missed (no metrics)		
			Loss of a major contract	???	
			Customer Confidence loss (emotional bank)		
Total	**$**	**285,000**			

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Once you have put science behind each of your costs and benefits, put them in the rolled up model. This will be your first view of how solid your case is. Fill in the intangibles. At times you can put the real costs that are unquantifiable into here.

Filling in the model

Investment Calculator	Number of years		5
	Cost	Benefit	
One time costs	$ 228,000		
Total recurring cost	$ 1,425,000	$ 6,725,000	
Total cost of SPE	**$ 1,653,000**	**$ 6,725,000**	
Return	**407%**		

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Finally you can roll up your costs into a five year projection. In this case, you are saying that you will be spending 1.6 million for a return of 6.7 million. Sounds pretty good

Get an executive sponsor

- Ask someone from finance to look over your financial model.

- Make your case to your management team and and your executive.

- Ask your executive to become a sponsor of SPE

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This is a very important step. Pass the numbers by a finance person. They will gladly look it over if you tell them that you are looking for ways to reduce costs. This really gets these folks smiling. It also helps when yu go to obtain your sponsor to say " Yup, Frank from Finance has looked these over"

Once all of your homework is done, you can start socializing the concept. Only you can know the politics of your specific situation, but ultimately your entire company will need to be on board. To do this, you will need an execuve to be on board and backing you. Someone will need to represent this in the board room, where every decision that requires major spending is made.

Reference for building your case

- Making the Software Business Case
  - Donald J Reifer
  - ISBN 0-201-72887-7
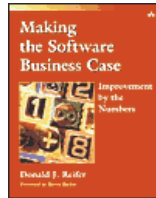
This is a book that I highly recommend for reference in speaking the language of the board room.