



Innovative Technology Transfer Partnerships

2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2017 | 2018 | 2019 | 2020

A journey to inspire, innovate, and discover...

Metrics, Measures & Myths

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“We do not have to measure everything just because we can.”

“We do not have to be able to measure something in order to assess its worth.”



The Mission of Technology Transfer

Collect IP?

Protect IP?

Create partnerships?

Generate revenue?

Help small businesses?

Reduce cost of doing business?

Enable capabilities

Improve the economy?

Improve life?

Transfer technology?

It's easy to lose sight of the objective...



The Mission of Technology Transfer

Collect IP?

Protect IP?

Create partnerships?

Generate revenue?

Processes

Help small businesses?

Reduce cost of doing business?

Improve the economy?

Improve life?

Outcomes

Transfer technology?

The mission

...it is easy to confuse the mission with the processes and/or the outcomes...



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First, the Myths

- Anecdotes cannot be quantified.
- Objectivity is superior to subjectivity.
- Intangible assets cannot be valued.
- **Better metrics, better knowledge.**
- Future outcomes can be measured in the present.
- The government “brand” denigrates quality.
- **Technology transfer is merely a transaction.**
- Technology transfer is one-way.



Success Story Criteria

Outstanding: Verifiable quantum improvement in quality of life; > 25% increase in market share; >25% increase in sales or size of firm;

Very Good: 10 - 25 % increase in market share; 10 - 25% increase in sales or size of firm;

Good: Up to 10% increase in market share; up to 10% increase in sales or size of firm;

Not Rated/Unknown: Less than 10% impact or unknown.



Success Stories - Example

2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2017 | 2018 | 2019 | 2020

Data are not actuals; for illustrative purposes only

Enterprises (or Mission Directorates

Y U T S R N M

Outstanding*	10	5	3	11	19	2	25
Very Good	19	7	2	21	29	5	34
Good	38	12	8	28	43	14	61
Not Rated/Unknown	83	37	11	95	123	29	143
Total (896)	150	61	24	155	214	50	263

* - Criteria for qualitative evaluation to be developed.



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The problem is not a lack of data . . .

■ CRADAS & PARTNERSHIPS			
ITEM	FY 1999	FY 2000	FY 2001
Active CRADAs EOY 2001			1
New CRADAs Added in FY01			0
Active Non-Traditional CRADAs EOY			0
Non-Traditional CRADAs, Added in FY			0
Total Agency \$R&D Base			
Intra-Mural \$R&D Base			
Extra-Mural \$R&D Base (FY Obs)			\$11,208,897,806
FY % of R&D Base			17.65%
Commercial Technology Budget			\$29,800,000
CTO Program % of R&D Base			0.27%
Commercial Technology Direct FTE CS			131
Commercial Technology G&A FTE CS			28
Total Partnerships			5,903
Partnerships Value			\$623,118,362
Value per Partnership			\$105,560
Partnerships Added in FY			1,898
Partnerships Value Added in FY			\$151,746,416
Added Partnership/Direct FTE CS			\$1,158,370
Value per Partnership Added in FY			\$79,951
Partnerships Added/Work Day			9
Partnership Value Added/Work Day			\$ 689,756
Dual Use Partnerships EOY			66
Value of Dual-Use Partnerships EOY			\$ 13,684,547
NASA Share for Dual-Use EOY			\$ 9,490,998
Dual-Use Partnerships Added in FY			36
Overall Leverage			\$207,342
Value of Dual-Use Partnerships Added in FY			\$ 11,748,748
NASA Share for Added Dual-Use			\$ 7,505,199
FY Leverage			1.6
FY Value per Dual-Use Partnership			\$326,354
Dual-Use Partnership Value Added/Work Day in FY			\$53,403



... but what data to use ...

■ Publications and Other Measures			
ITEM	FY 1999	FY 2000	FY 2001
TechBriefs			2,404,680
Innovation			89,440
SPINOFF			~45,000
WebPage Visits (TechFinder, TOPS)			
Qualified Leads Generated, All Sources			
WebPage Registrations (TechFinder, TOPS)			6,278
Supported Technologies			20,100
Success Stories EOY			496
Success Stories in FY			163
Item(s) in light green are reported as a GPRA "Communicate Knowledge" metric; those in light yellow are also "Communicate Knowledge" related.			
■ Invention Disclosure, Patenting, And Licensing			
ITEM	FY 1999	FY 2000	FY 2001
Total Activities in FY			12,494
Activities with NTR Clause			11,419
% with Potential			60.00%
% with No Potential Identified			22.90%
% with Potential Not Assessed			17.00%
% with Reportable Item			14.80%
TOTAL FY Invention Disclosures			1347
NASA/JPL Invention Disclosures			696
Contractor Invention Disclosures			651
NTR's received in FY			1362
NTR's Released to Public in FY			154
NTR's Released/NTR's Received			11.31%
NASA Patent Applications Filed in FY			114
Patents Applications/Invention Disclosures			8.46%
Patents Granted in FY01 to NASA			97
Invention Licenses Active During FY			176
New Invention Licenses Executed in FY			27
Active Licenses for Other IP in FY			32
Licenses Terminated for Cause in FY			23
Total Number of Active Licenses for Which NASA Received Royalties in FY	Exclusive		53
	Partially Exclusive		13
	Nonexclusive		39
Elapsed Time from Date of License Application to Date of License	Minimum		122 days
	Maximum		1518 days
	Median		439 days

... that is insightful.



Fundamental Questions

**If only one measure be used, what
would it be?**

Is anything else needed?

“Not everything that counts is countable; not everything that is countable counts.”
- Albert Einstein



What's important to us?

1. Program Management Metrics: Performance, Schedule, Costs
2. The basics: partnerships, licenses & royalties
3. Technology Transfer Metrics: GPRA, partnerships, success stories, licenses, royalties

So what do we do?

1. Focus on what's important: partnerships, **leverage, success stories**
2. **Balanced scorecard**
3. Automate the routine stuff
4. Ignore the non-essential



...focuses upon the end goal of the program, whether the aim is infusion or diffusion...

The Metrics --

High > 5 times our contribution

Medium < 5 times our contribution

Low < twice our contribution

Breakeven (the traditional partnership)

Unacceptable



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A Balanced Score Card

	<u>Weight</u>
• Response Time	0.10
- Time to License	
- Time to Execute Agreement	
• Leveraged Partnerships	0.30
- Innovativeness	
- Criticality	
- Interest	
• Lead Generation	0.15
• Tech. Transfer to Mission	0.25
• Success Stories	<u>0.20</u>
Total	1.00

This permits balancing internal and external criteria.



What does this approach promise?

Answers the questions...

- Resources used -- what did it cost?
- Lost opportunities -- what was missed?
- Sunk costs -- what is lost?
- Reimbursables -- what was gained?
- Royalties -- what else was gained?
- Success Stories -- what happened?
- Performance efficiencies -- how well did we work?



Summation

- If one can provide a clear and succinct *raison d'être* with unambiguous goals and a few meaningful measures, one has – besides a framework for a successful program – an efficient comb for removing that which is not needed.