

# PetroSkills®

**Get ready for a people  
problem...**

**J. Ford Brett**

Managing Director - PetroSkills



HALLIBURTON



ConocoPhillips



OGCI

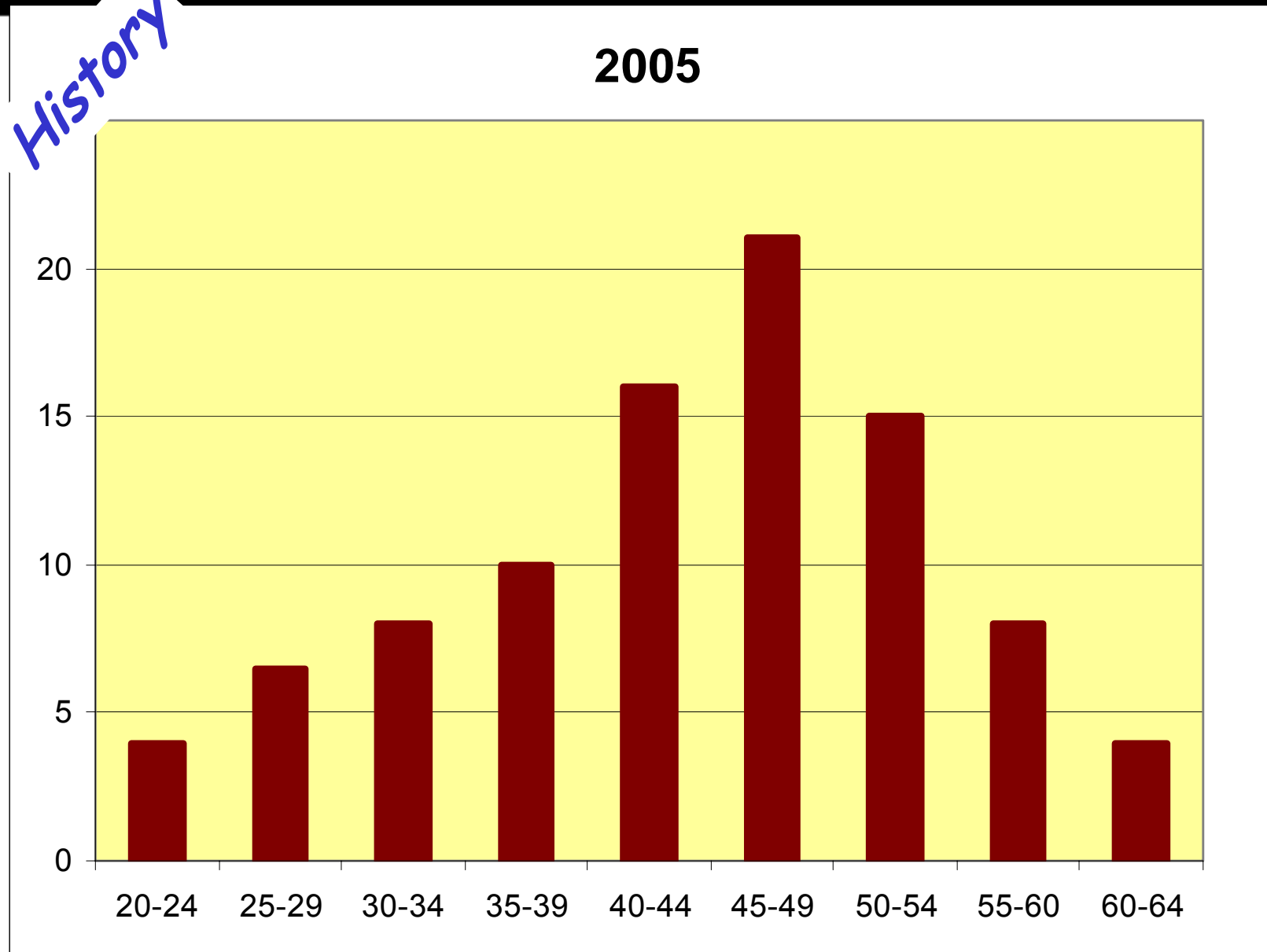
TTG Systems

John M. Campbell  
& company

UTT  
UNIVERSITY OF TENERIFE AND TONGA

# Demographics: the future that not yet happened

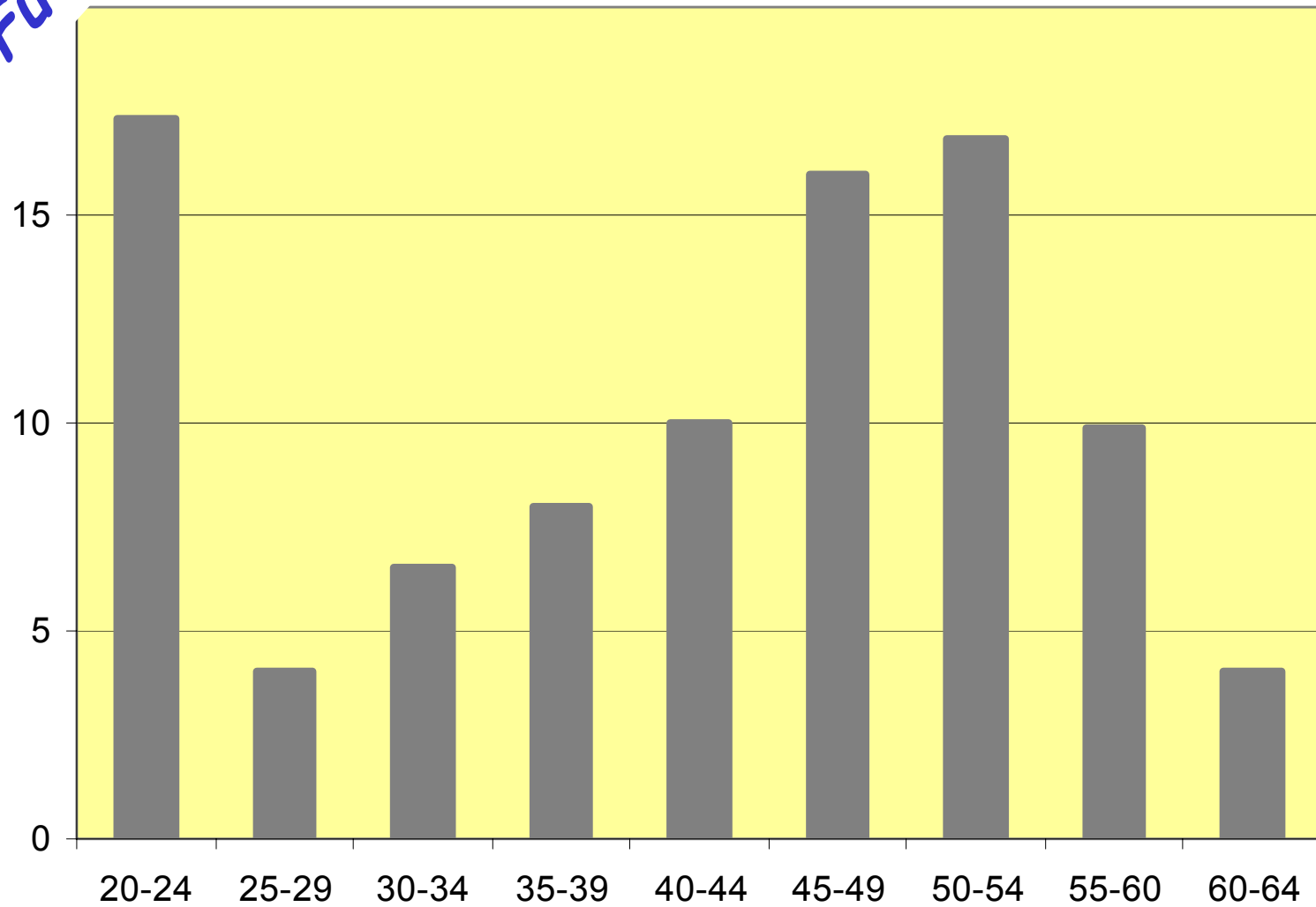
History



# Demographics: the future that not yet happened

Future

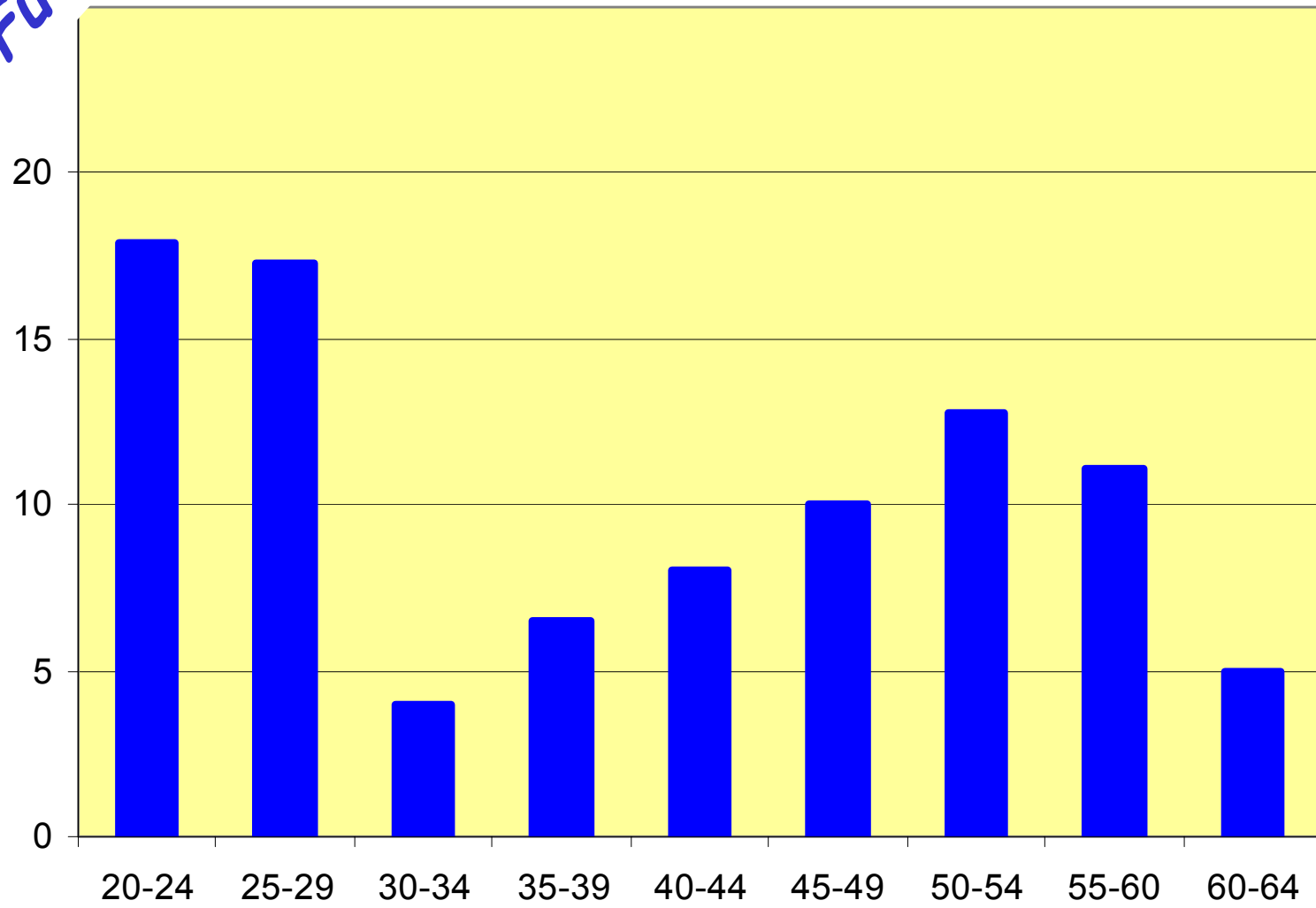
2010



# Demographics: the future that not yet happened

Future

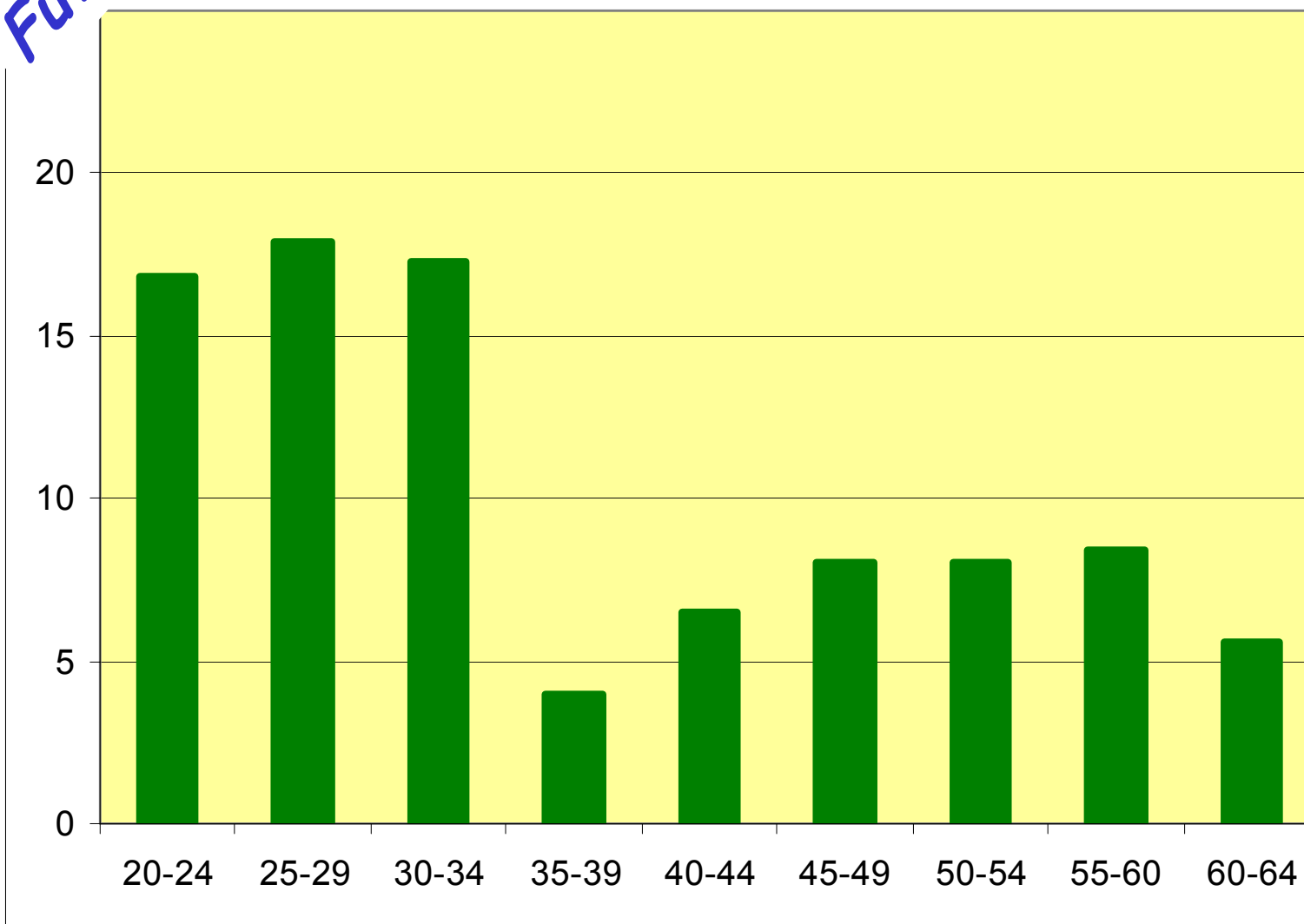
2015



# Demographics: the future that not yet happened

Future

2020



# Soon to be a very different world

## ***“Big Crew Change” Implications:***

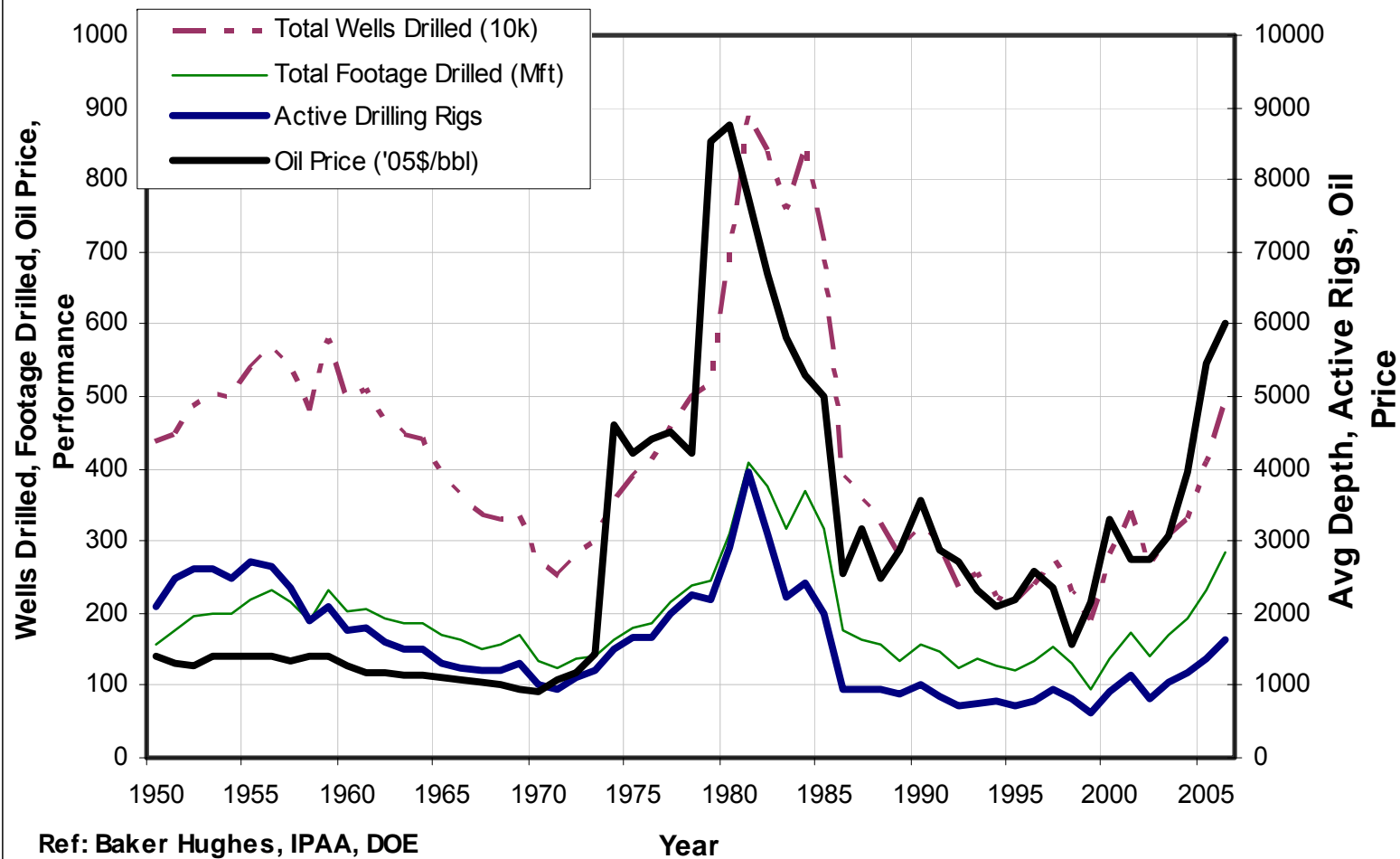
- **Not a “Hiring Spurt” but a “Hiring Era”**
- **Soon >20% will be have <5 yrs experience**
  - And it will be that way for at least a decade
- **Hiring will be *Effected* but Not *Driven* by Oil Price**
  - The industry is doomed to have legions of new hires
- **Different situation than anytime in the past 20 years**
- **Current Managers learned by cutting**



***So What?***

**What does this mean to us?**

## 55 Years of US Drilling Activity

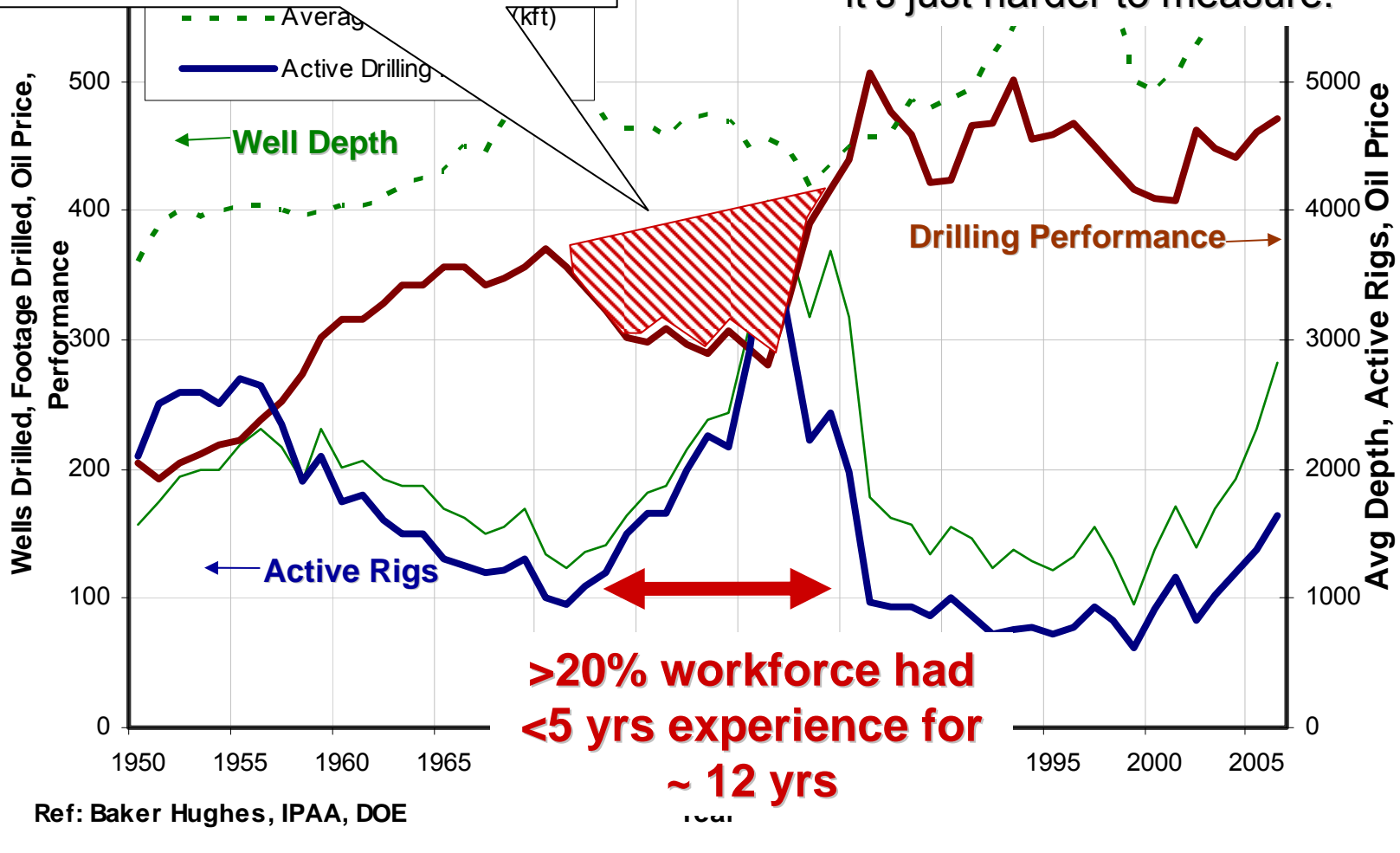


# 55 years of US drilling activity

**20 to 33% Reduction in Performance**

of US Drilling

Drilling is 'measurable'; Performance undoubtedly also declined in all other disciplines – it's just harder to measure.

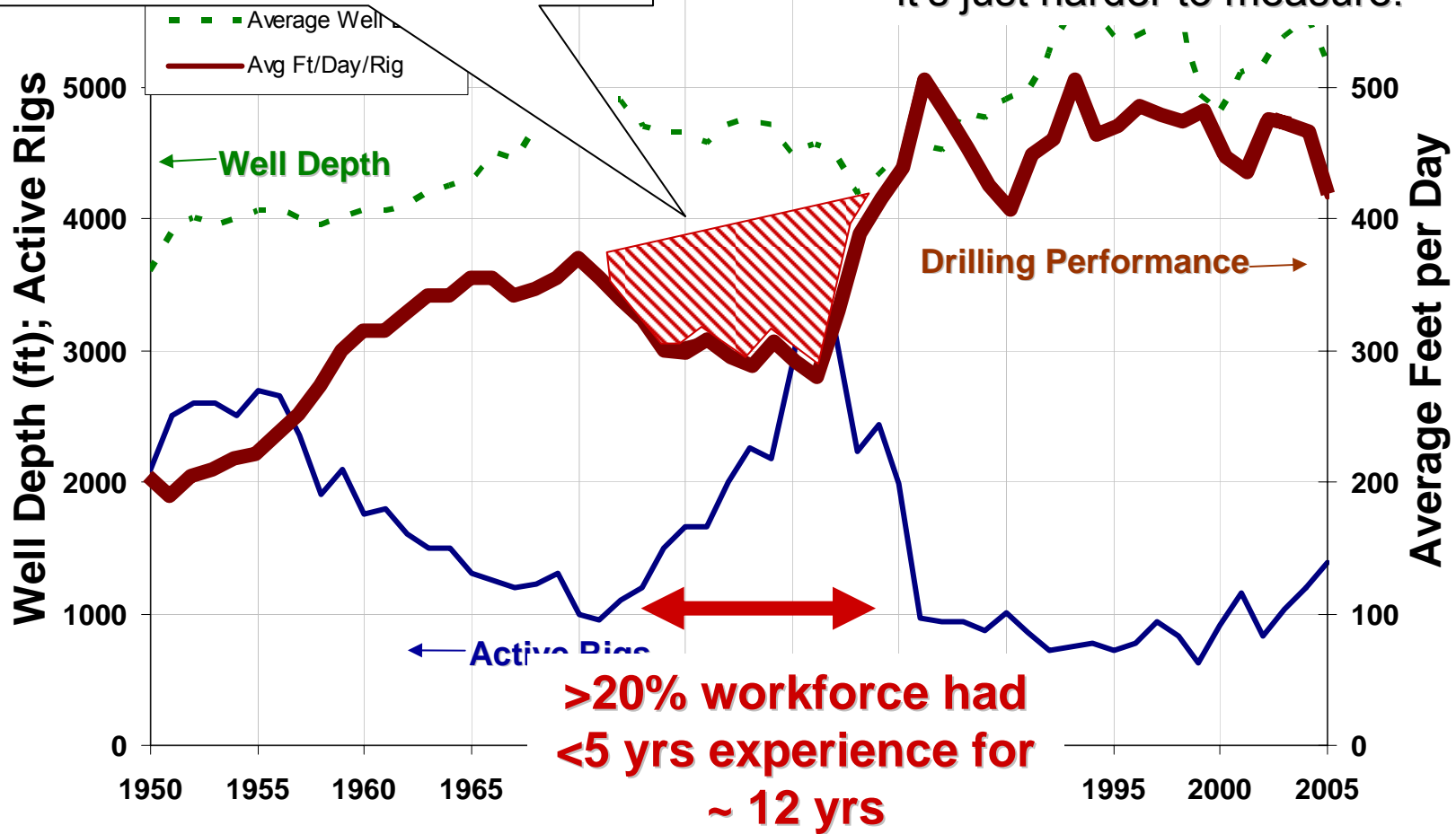


Ref: Baker Hughes, IPAA, DOE

# Economic Impact of Competency Gap

**20 to 33% Reduction in Performance**

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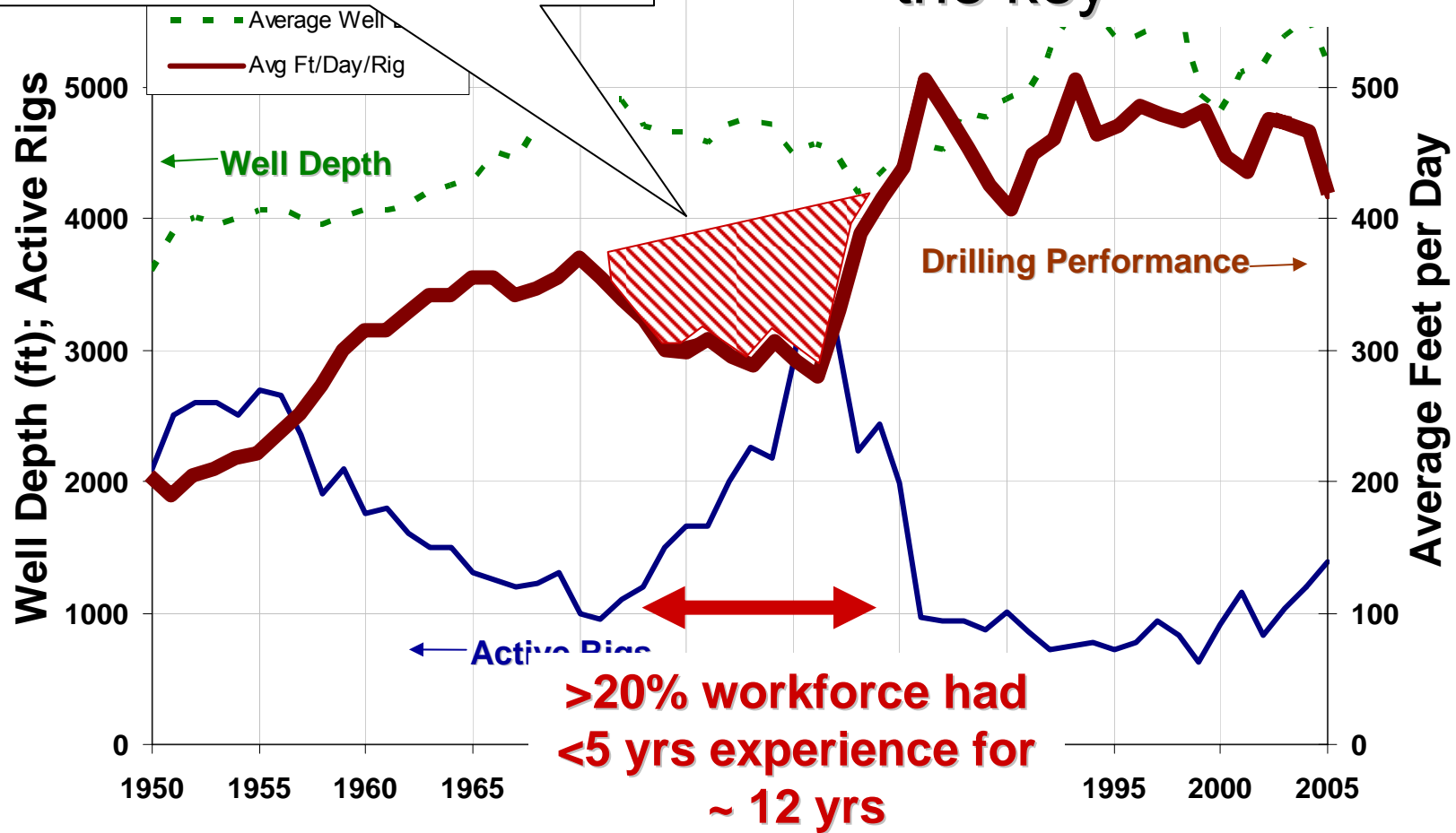


Source: BHI Rig Count, IPAA

# Economic Impact of Competency Gap

**20 to 33% Reduction in Performance**

Performance a **EDUCATION: is the key**



Source: BHI Rig Count, IPAA

# What is Education?

**“The act or process of imparting or acquiring particular knowledge or skills, as for a profession.”**

*Oxford English Dictionary*

# What is a Profession?

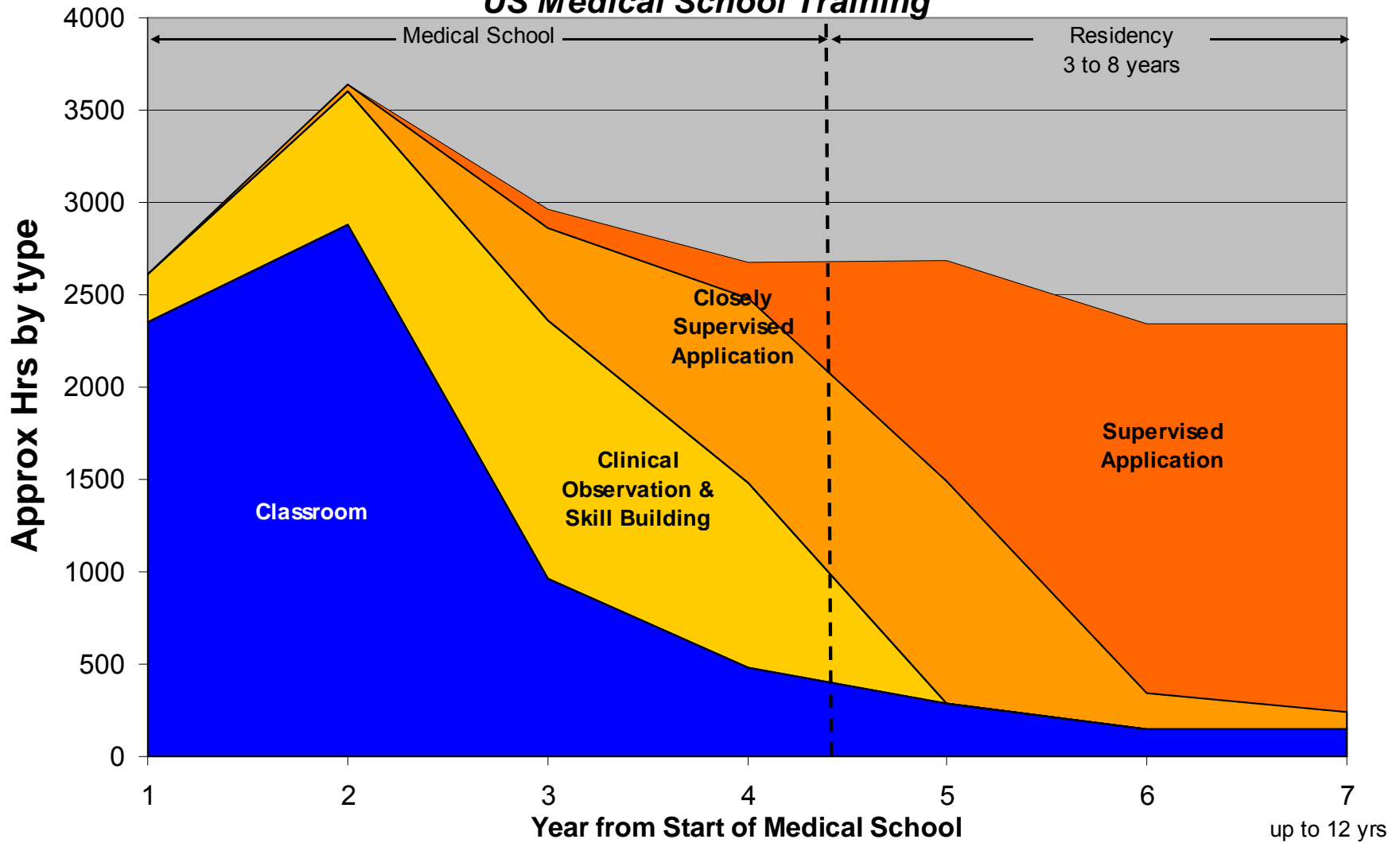
**“An occupation requiring significant training and specialized study, such as the professions of law, medicine and engineering”**

*Oxford English Dictionary*

# How does a 'Real' Profession Impart Knowledge/Skills

## How to Make a Medical Doctor

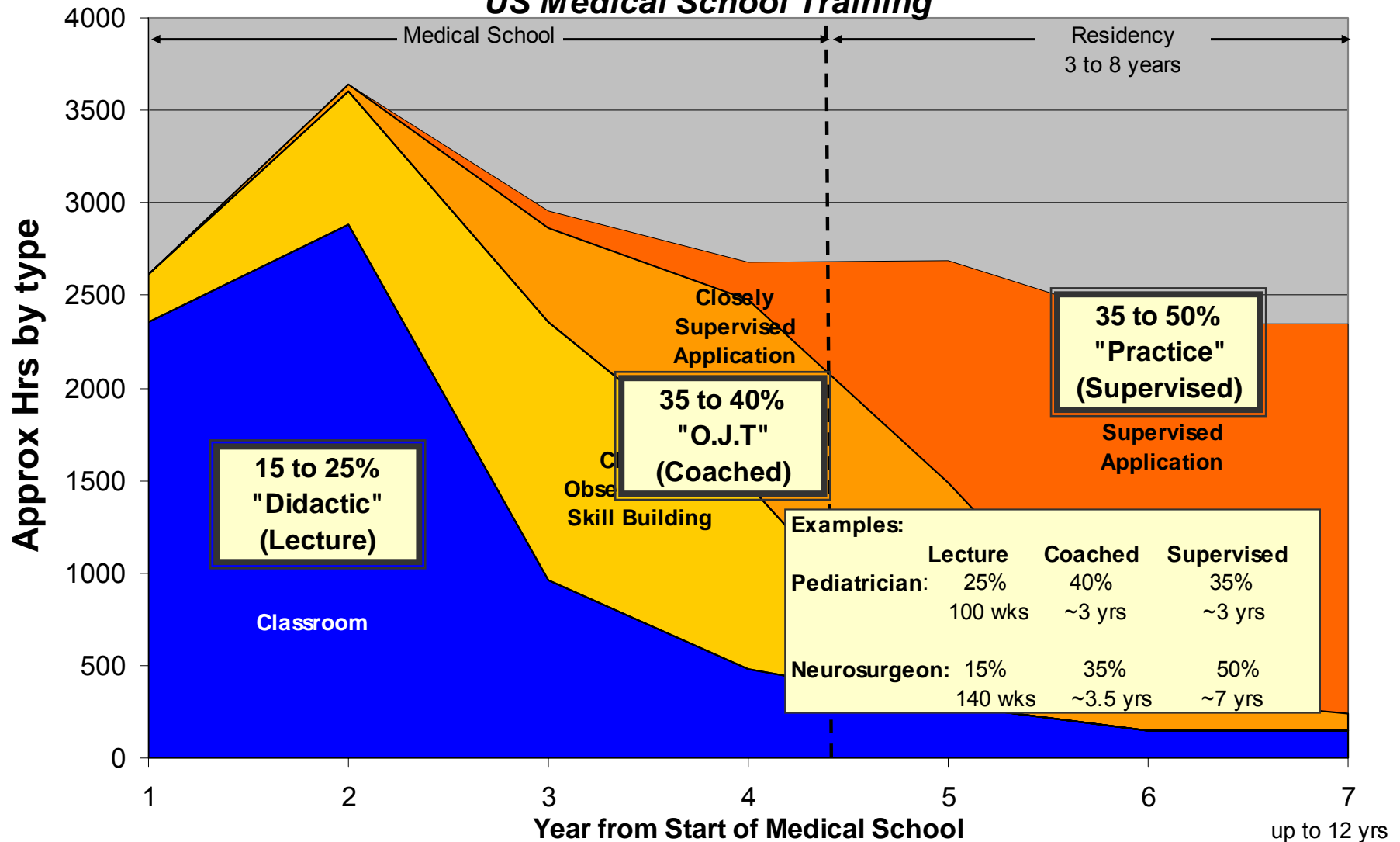
### US Medical School Training



# How does a "real" profession impart Knowledge/Skills

## How to Make a Medical Doctor

### US Medical School Training



# Questions that come to mind...

- **How does the medical split of Lecture/Coached/Supervised development compare with the petroleum business?**

| <i>For 1<sup>st</sup> seven yrs:</i> | <b>Lecture</b>               | <b>Coached</b>               | <b>Practice</b>              |
|--------------------------------------|------------------------------|------------------------------|------------------------------|
| <b>Medical Dr.</b>                   | <b>15 to 25%</b><br>(100wks) | <b>35 to 40%</b><br>(~3 yrs) | <b>35 to 50%</b><br>(~3 yrs) |
| <b>One Major's Benchmark</b>         | <b>10%</b><br>(50wks)        | <b>~40%</b><br>(~3 yrs)      | <b>~50%</b><br>(~4 yrs)      |

- **Professional Education** *(The act or process of imparting or acquiring particular knowledge or skill)* should be a mix of **Didactic (theory), Coaching and Practice**

## ***“Real” Professionals:***

- **Don't do things they're not trained to do.**
- **Don't make recommendations without doing their homework first.**
- **Put their client's interest first.**
- **Practice their whole lives.**
- **Have a Common “Body of Knowledge”**
- **Think they are a Profession.**

## ● Is Petroleum Engineering even a Profession?

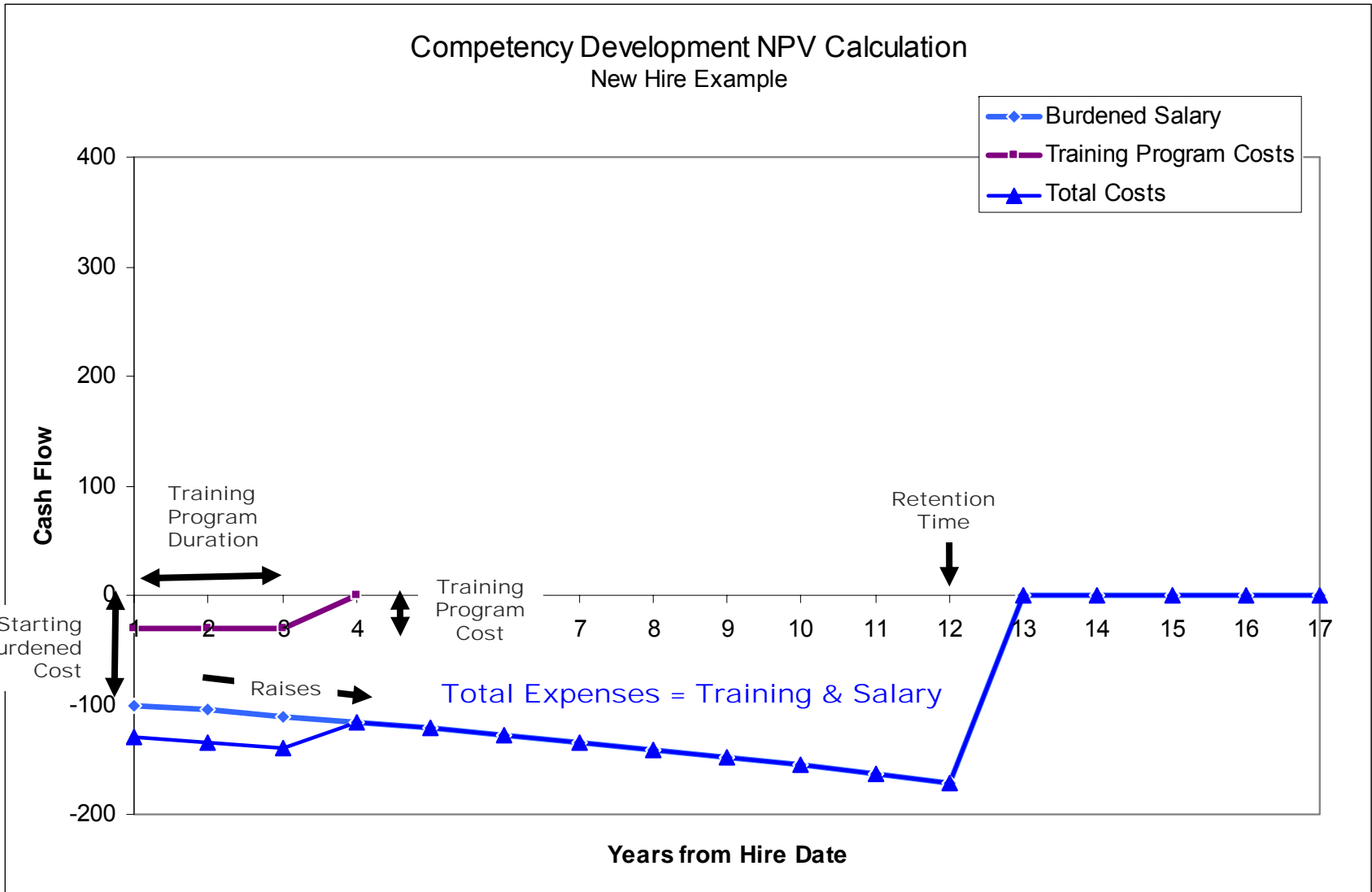
**No** – It's a *CRAFT* practiced by “Environmentally Insensitive, Tobacco Chewing Cowboys”

**Yes** – It requires significant training and pays like other professions.

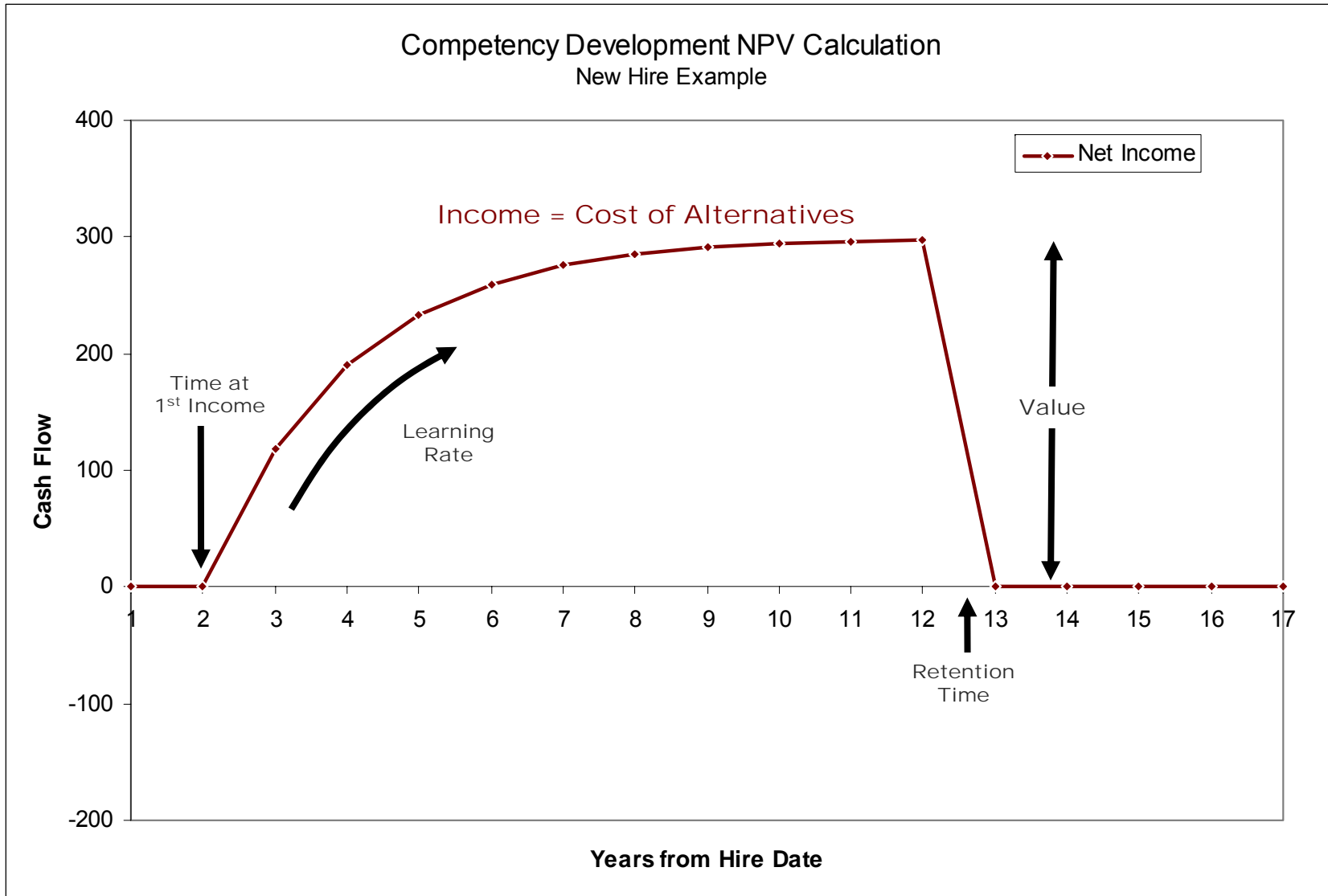
## But I thought we are a business...

- **I've learned that 'Managers Like Money'**
- **Current crop of managers learned by cutting... not growing**
- **Different world**
- **Need competent people to get things done**

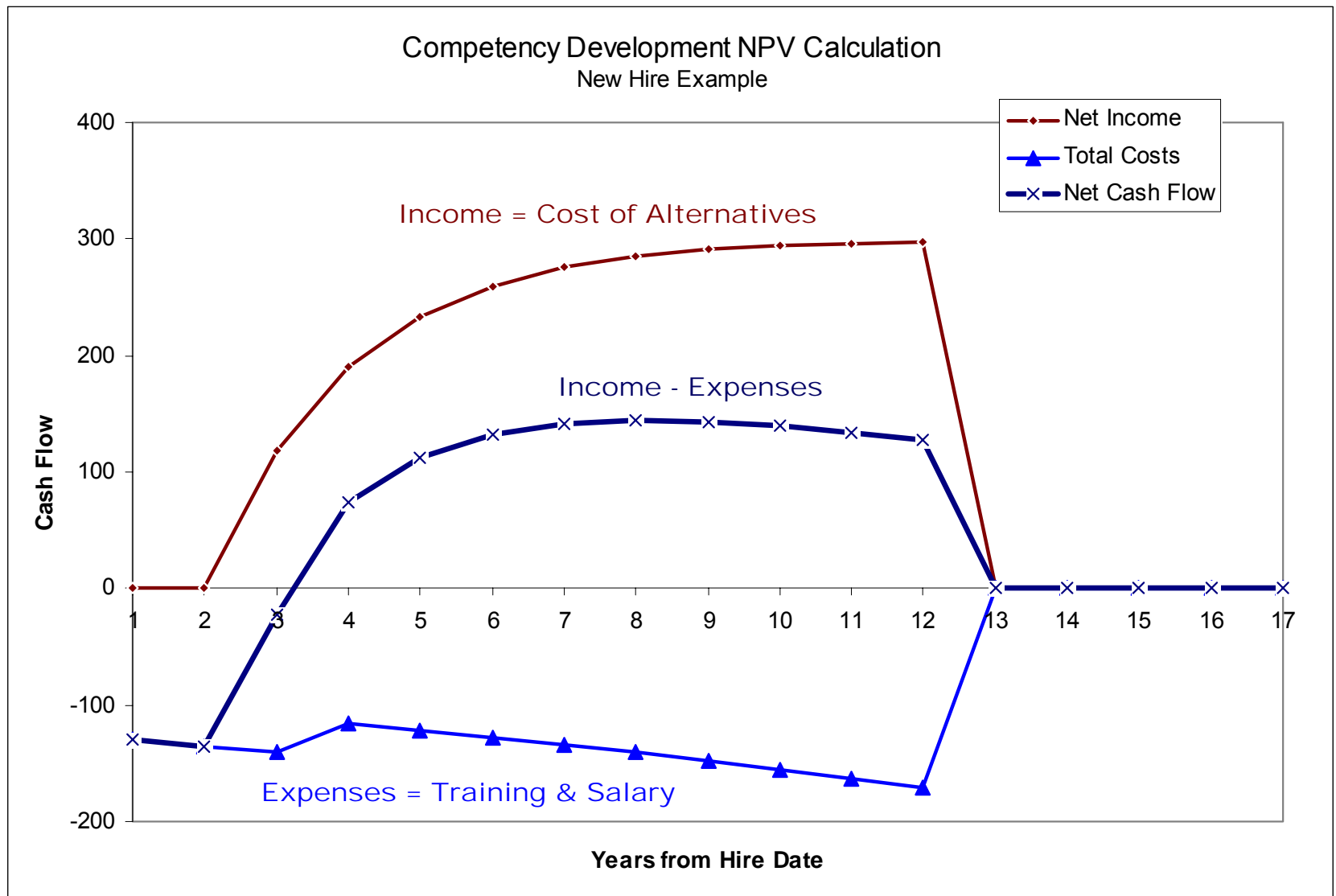
# Expenses: Salary & Training Costs



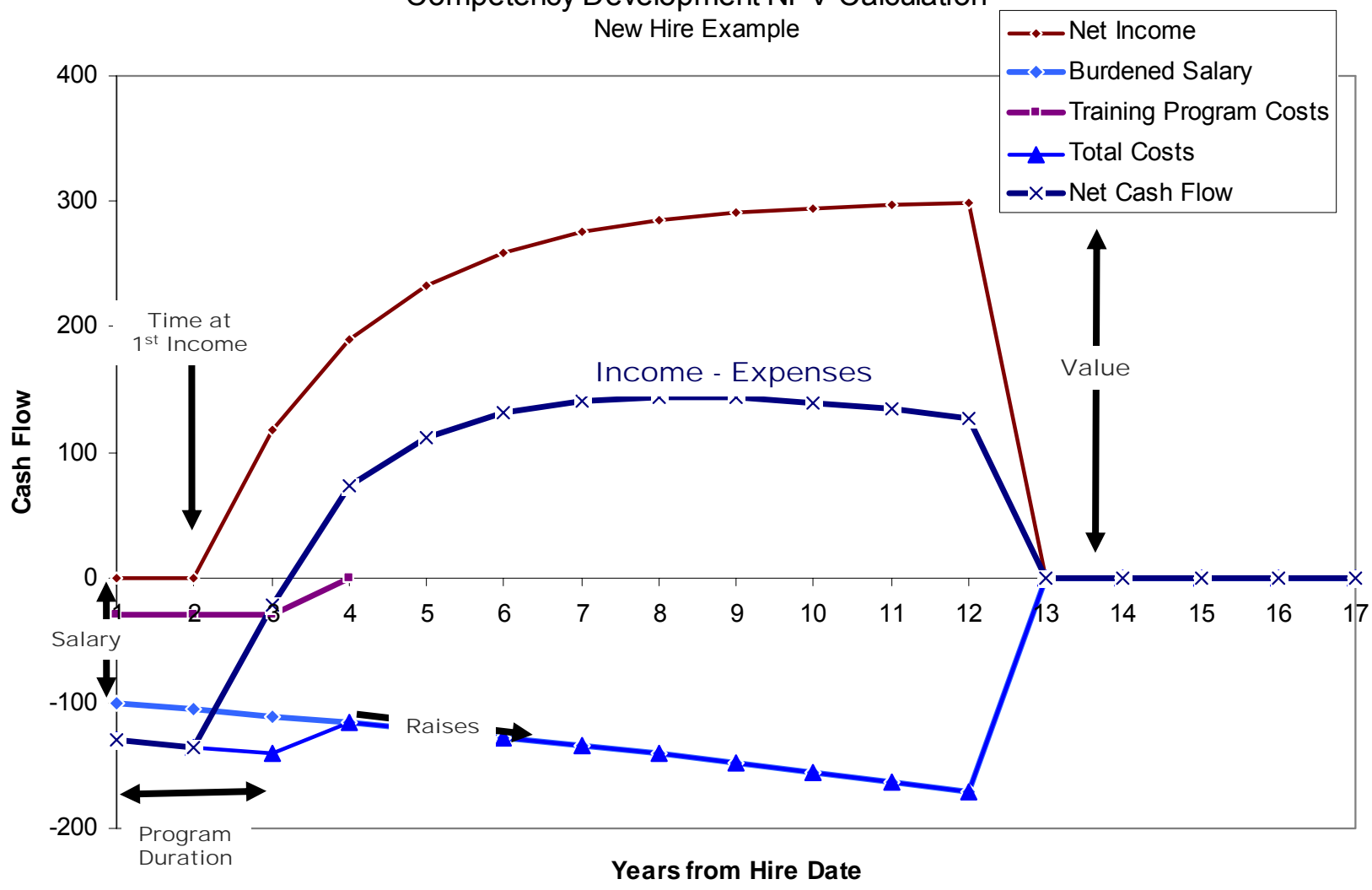
# Value: Cost of Alternatives



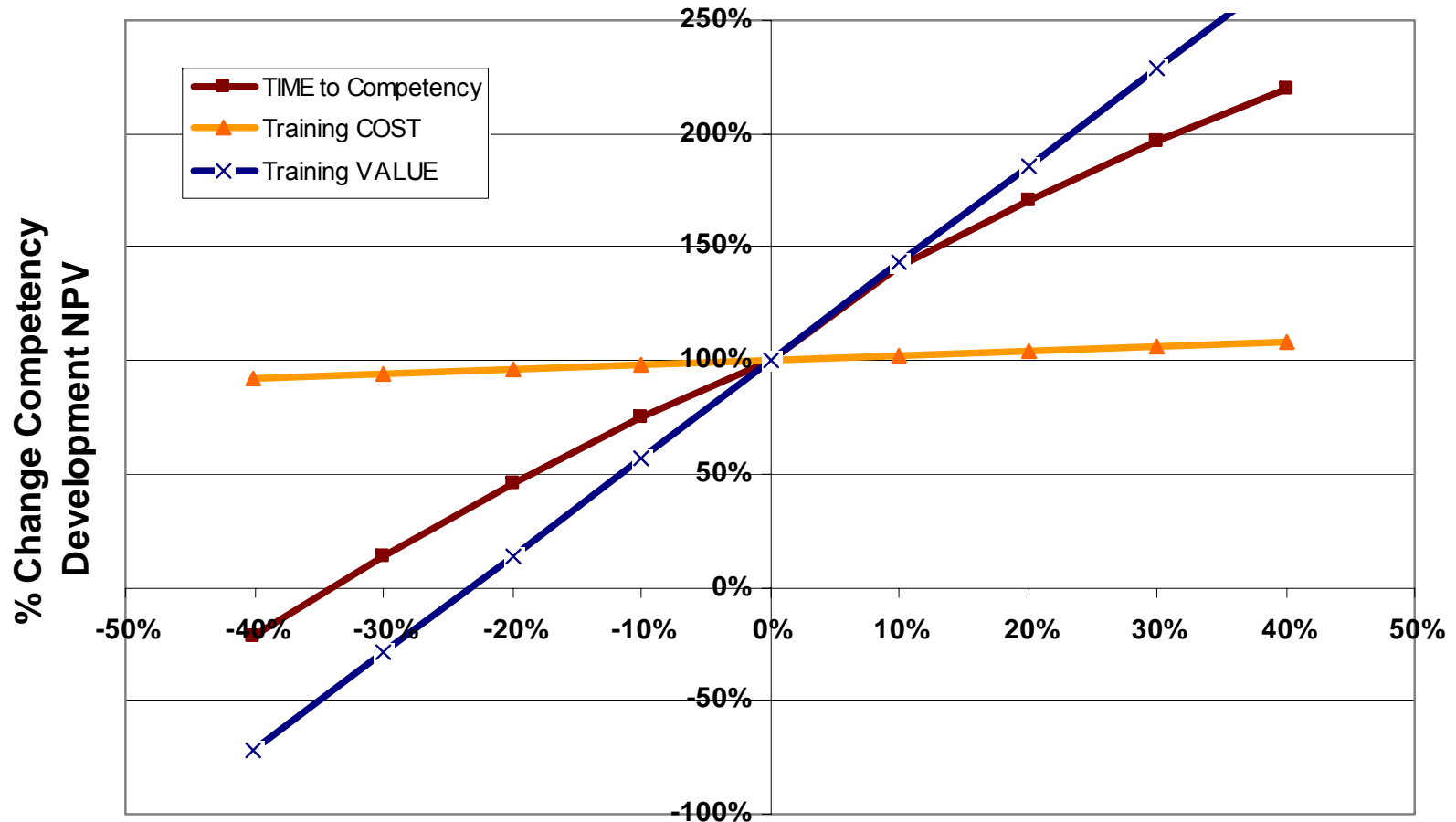
# Net Cash Flow = Income - Costs



### Competency Development NPV Calculation New Hire Example



# NPV of Competency Development Spider Plot



**BASE CASE:** % Change in Time, Cost, Value

| DEVELOPMENT COSTS              |        | VALUE                             |        | ECONOMICS                |            |
|--------------------------------|--------|-----------------------------------|--------|--------------------------|------------|
| Starting Burdened Cost (\$/yr) | \$ 100 | Cost to Replace (Value) (\$/yr)   | \$ 300 | Discount Rate            | 12%        |
| Real Salary Increases (%/yr)   | 5%     | Time to 1σ (63%) Competency (yrs) | 2.0    | <b>NPV</b>               | <b>249</b> |
| Training Program Cost (\$/yr)  | \$ 30  | Time to First Revenue (yrs)       | 2.0    | <b>DROI (NPV/PVCost)</b> | <b>30%</b> |
| Training Program Time (yrs)    | 3.0    | <b>WORKING LIFE</b>               |        |                          |            |
|                                |        | Time at Quitting (yrs)            | 12     |                          |            |

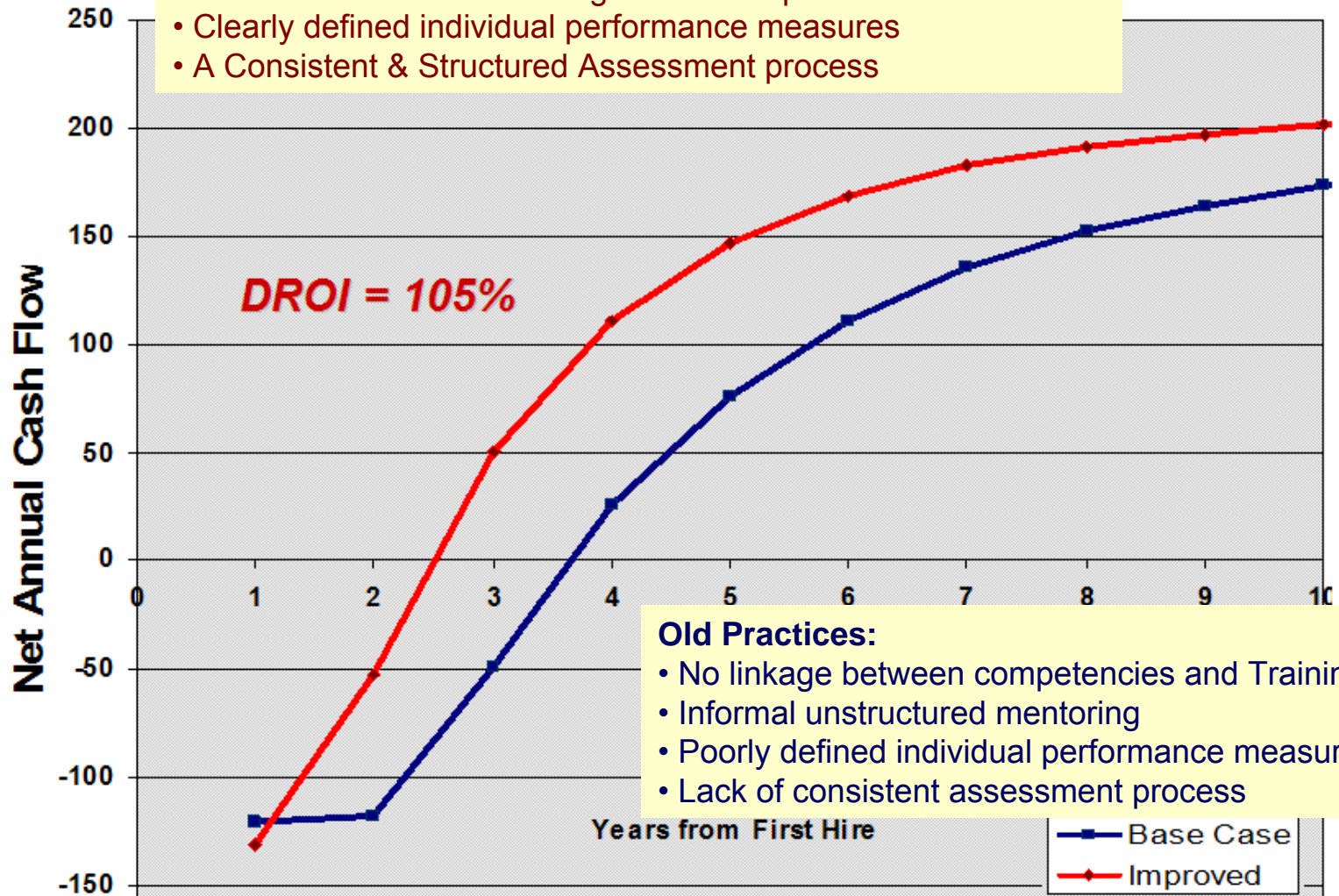
# Is Quantified Success Possible?

**Yes: Quantified Success is possible... when done properly**

# Nexen Drilling since '03

## Competency Management:

- Well defined linkages between competencies & training
- Formal Structured Mentoring w/ Work Experience Inventories
- Clearly defined individual performance measures
- A Consistent & Structured Assessment process



## Old Practices:

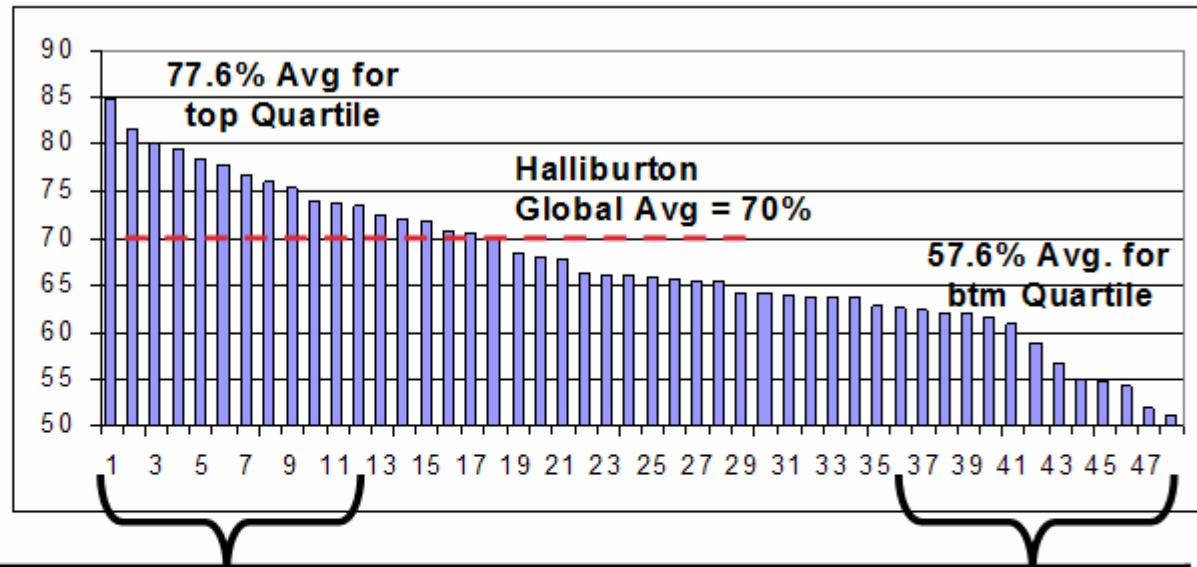
- No linkage between competencies and Training
- Informal unstructured mentoring
- Poorly defined individual performance measures
- Lack of consistent assessment process

Ref: Eric Diggins, SPE 84442

Nexen uses: CAT, Work Experience Inventories, and integrated 'on line' Drilling Manuals (linked to CAT)

# Halliburton Quantified Success

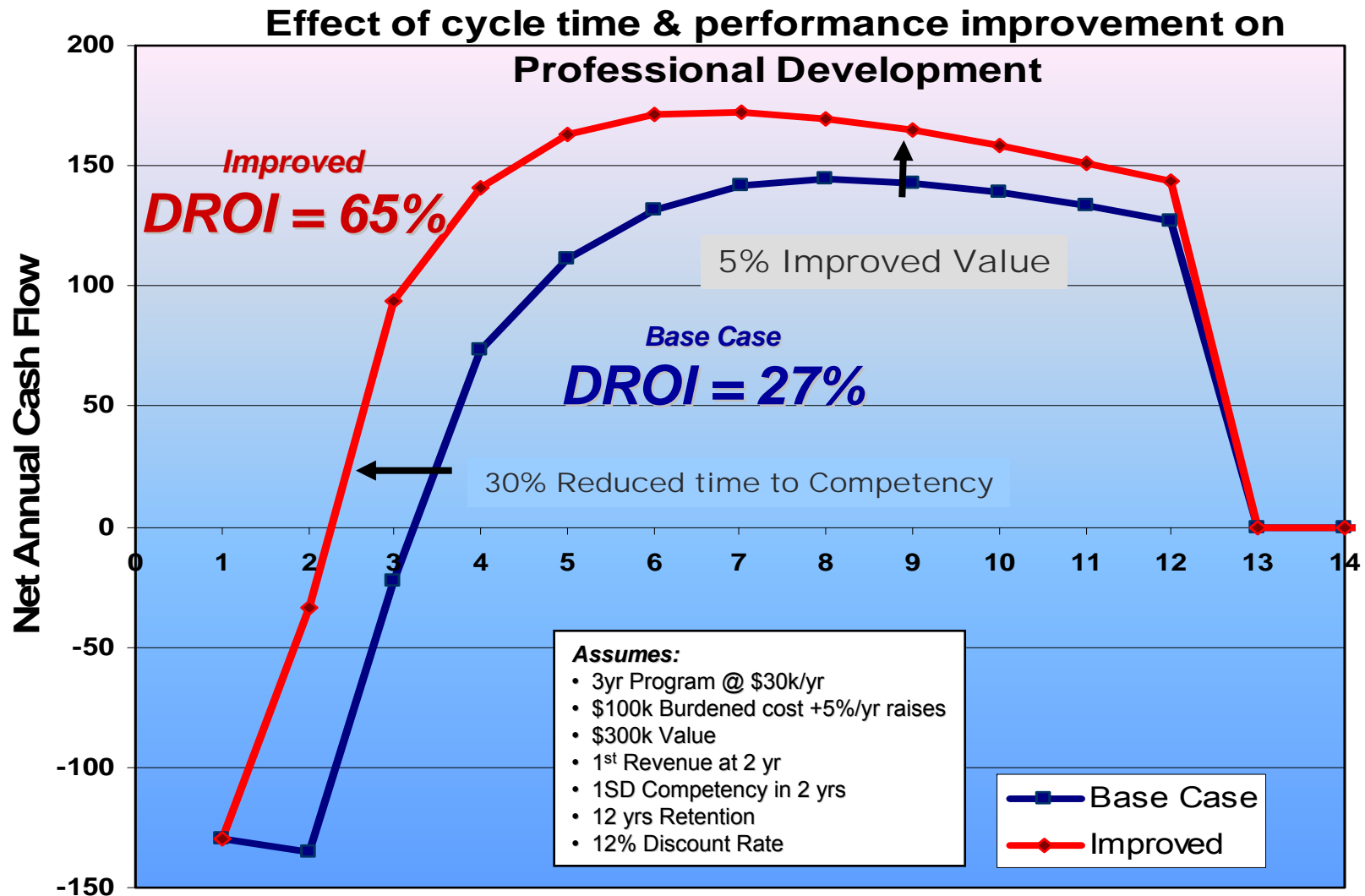
Total  
Engagement  
Score  
% Favorable  
Responses



|                       | Top 12 | US Average | Bottom 12 |
|-----------------------|--------|------------|-----------|
| Safety (TRIR)         | 1.62   | 1.8        | 2.41      |
| Customer Satisfaction | 97.3%  | 95.4%      | 95.4%     |
| Done Right Index      | 93.7%  | 91.6%      | 89.1%     |
| Attrition (OA I & II) | 33.0%  | 46.2%      | 59.7%     |

Ref: Demski et al **SPE 111857**

# Successful Programs: Fill a Business Need

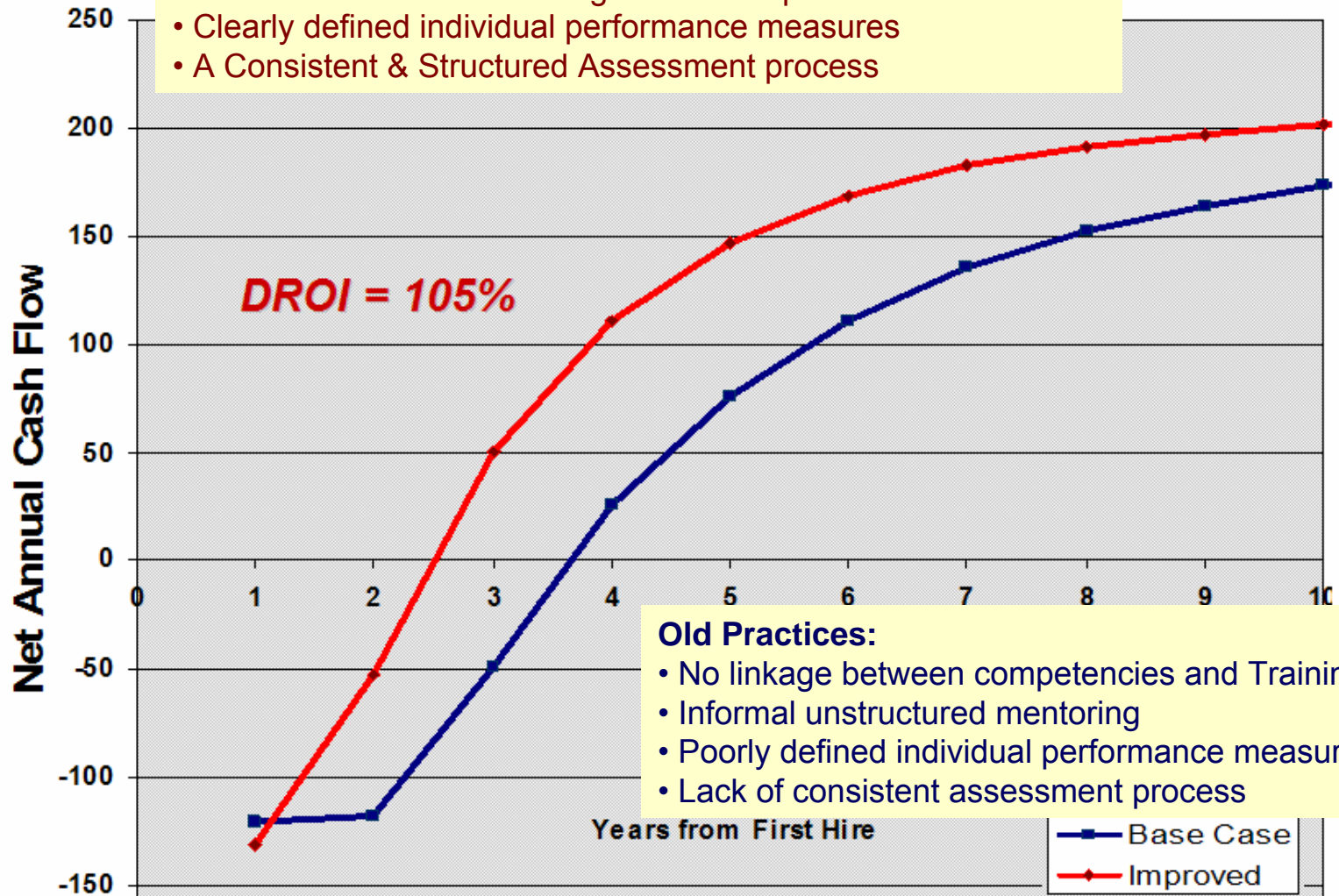


*... Focus on Job Relevant Competencies*

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