

In Search for A Thesis Topic

Hazhir Rahmandad

M.I.T. Sloan School of Management

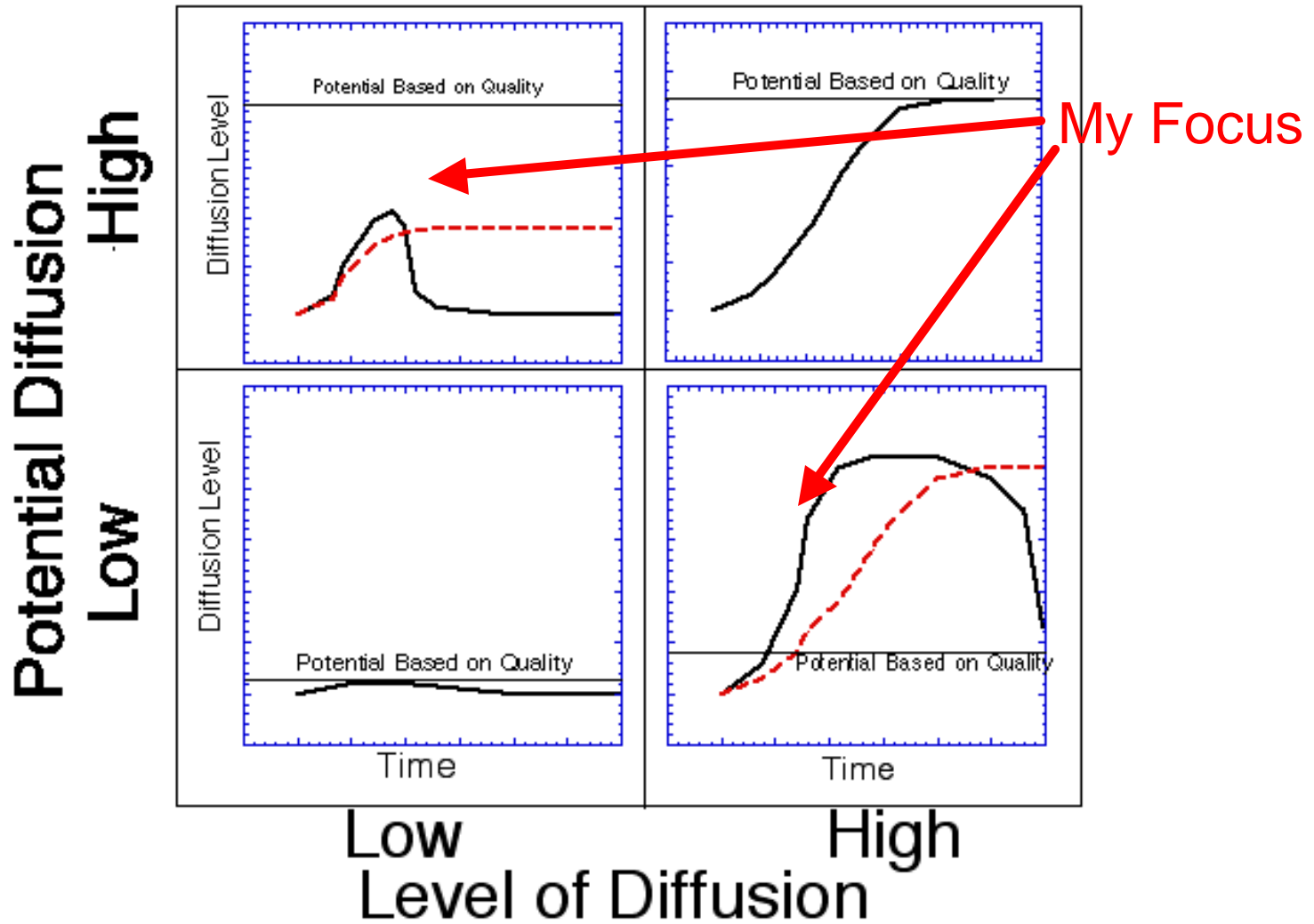
Motivation and History

- Done with courses and exams, I need to do a thesis!
- Following David's advice on picking a mentor and learning the craft! (It is not as easy as it sounds)
- Initial idea: Why bad things happen to good ideas and vice versa?
 - Diffusion of Medical innovations
 - Diffusion of Organizational Innovations

How you can help

- What sounds interesting?
- Challenges and barriers you foresee
- Possible data sources
- People who can help
- Process comments

Why bad things happen to good ideas and vice versa?



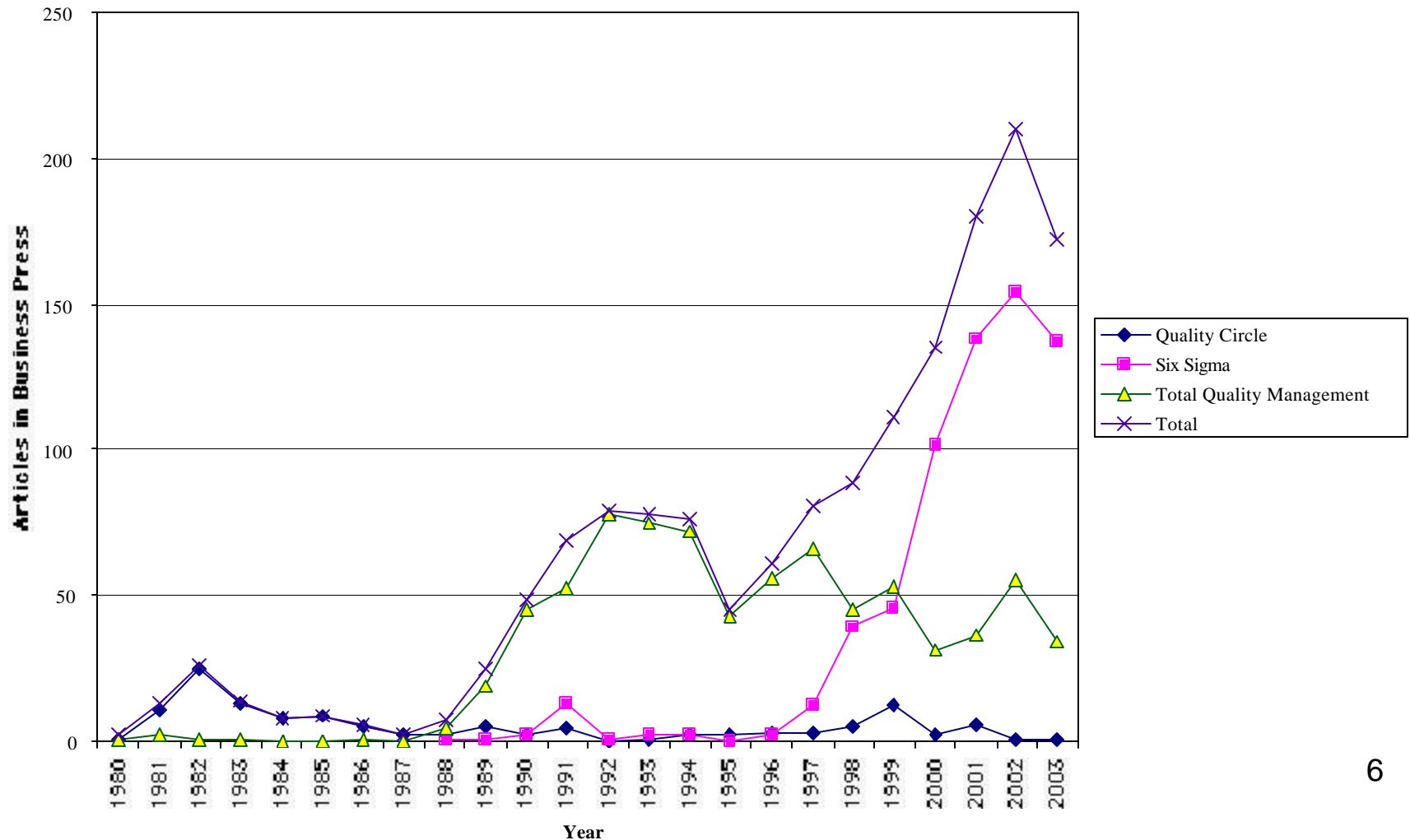
Diffusion of medical innovations

- Examples: Radical Mastectomy, Vitamin C, Peptic Ulcer Surgery, CAM(?)
- Entails:
 - Finding a case (I have been looking for it)
 - Finding an audience (EBM?)
 - Case study, building a calibrated model
- Which community is interested?
- Challenge: I am not excited about it

Diffusion of Quality Programs

- Waves of quality programs:

Publication patterns of quality programs



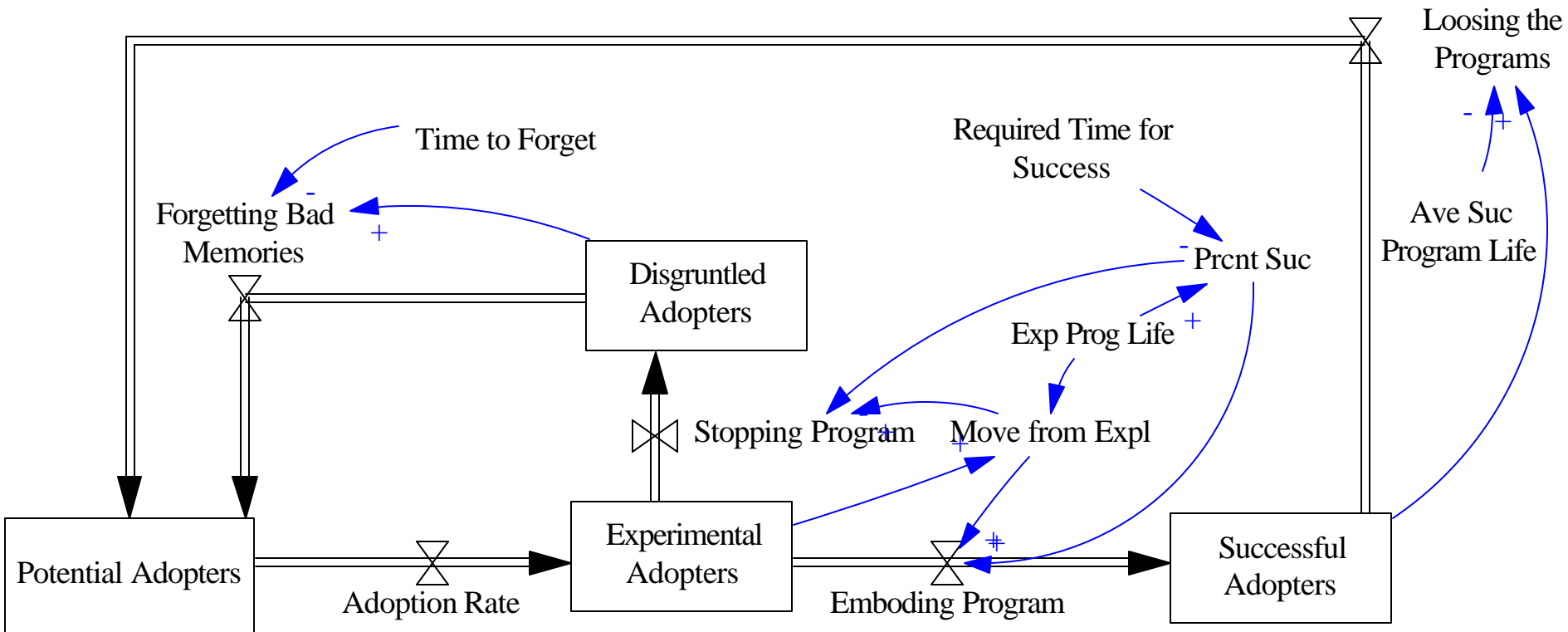
Diffusion of Quality Programs

- Old wine in new bottle?

Tools and techniques	Specificity	TQM	QC	6 Sigma
Checklists	5	y	y	y
7 Quality control tools	5	y	y	y
Statistical Process control	5	y	y/n	y
Flow Charts	4	y	y	y
Quality Function Deployment (QFD)	4	y	n	y
7 management or planning tools	4	y	y/n	y/n
Brainstorming	4	n	y	y
Failure Mode and Effects Analysis (FMEA)	3	y	n	y
Taghuchi quality engineering	3	y	n	n
Benchmarking	2	y	n	n
Departmental Purpose Analysis (DPA)	2	y	n	n
Design of Experiments (can be broken down)	2	y	y/n	y
Mistake Proofing	2	y	n	y
PDCA/PDSA	2	y/n	n	n
DMAIC	2	n	n	y
Information Technology	1	y	n	n
Quality by design	1	y	n	y
Total Productive Maintenance	1	y	n	n

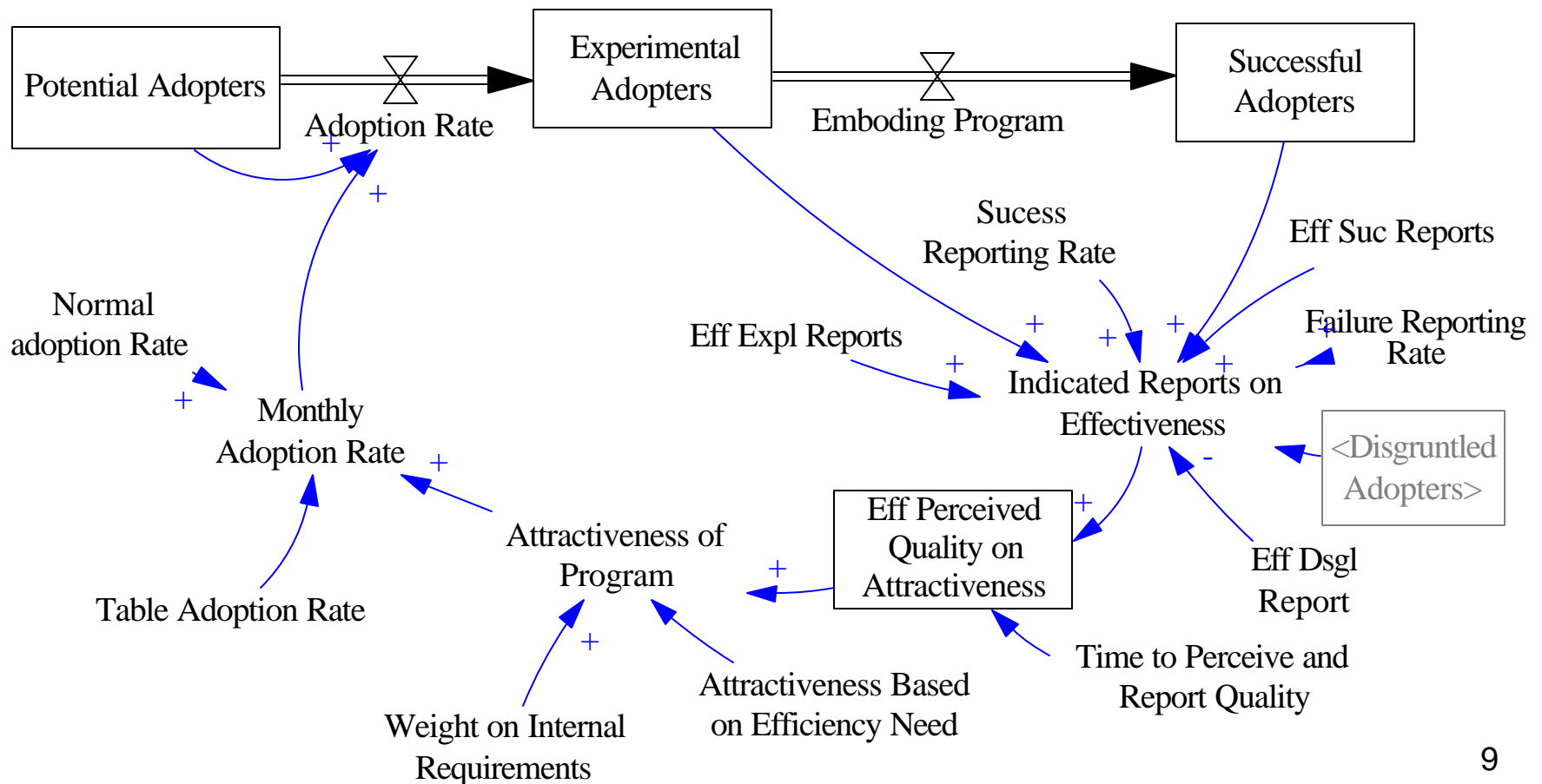
A Simple Model

Stock and flow Diagram:



A Simple Model

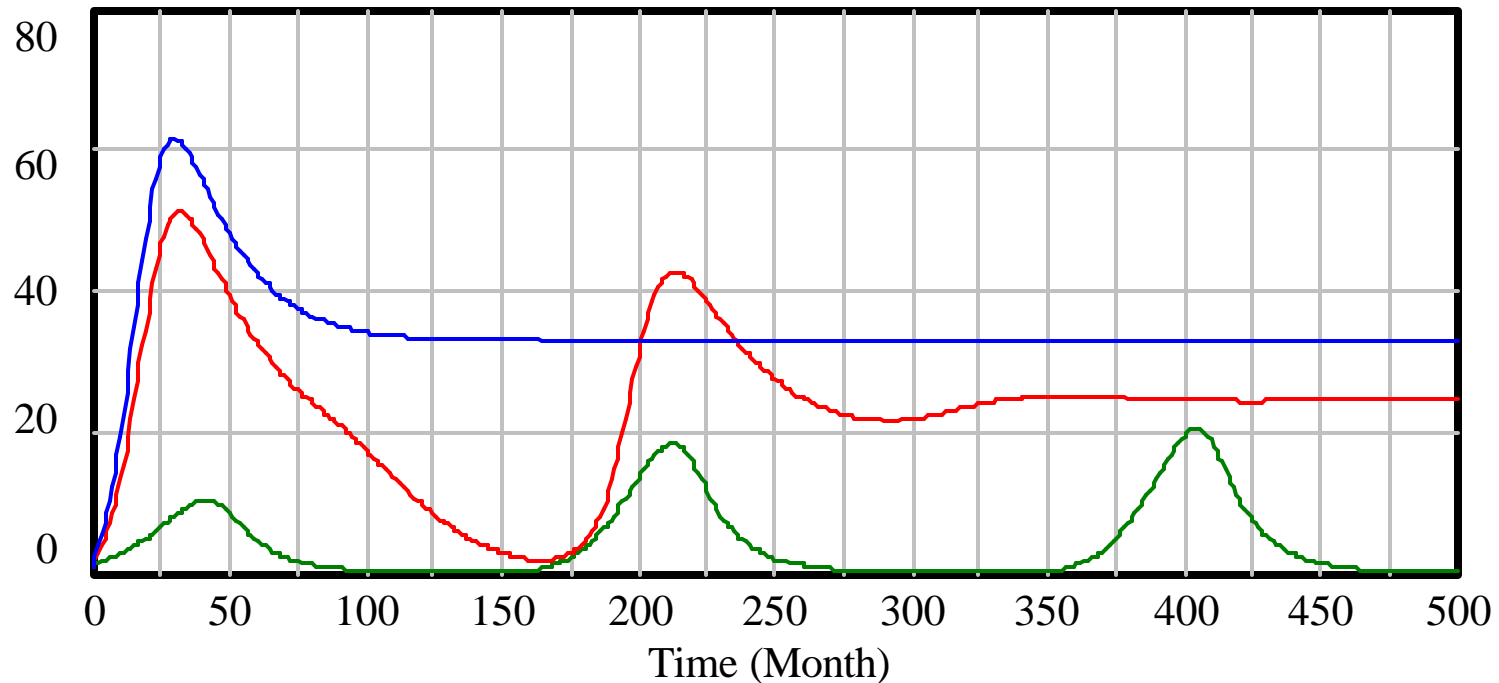
Adoption Rate:



A Simple Model

Some Modes of Behavior

Experimental Adopters



Experimental Adopters : Sep23-Overshoot ————— Company
Experimental Adopters : Sep23-Damped ————— Company
Experimental Adopters : Sep23-Limit ————— Company

Diffusion of Quality Programs

- Data sources
 - Article counts and text analysis
 - Surveys of companies/individuals (not so many existing, costly to conduct)
 - Archival data on companies
 - A single company study (where? Access?)
- Possible contributions:
 - Empirical data for abandonment
 - Oscillations in diffusion

Questions

- Tightening the design for quality programs?
- Company selection/access if to do case study?
- Should I pursue medical innovations?
- Who to talk to?
- Process advice?