


The slide features a dark red background with a faint image of a hand holding a pen over a grid. The title 'Software Engineering Economics (CS656)' is centered in white, with 'Managing Technical People' below it. The name 'Jongmoon Baik' is centered below the title. The KAIST logo is at the bottom center.

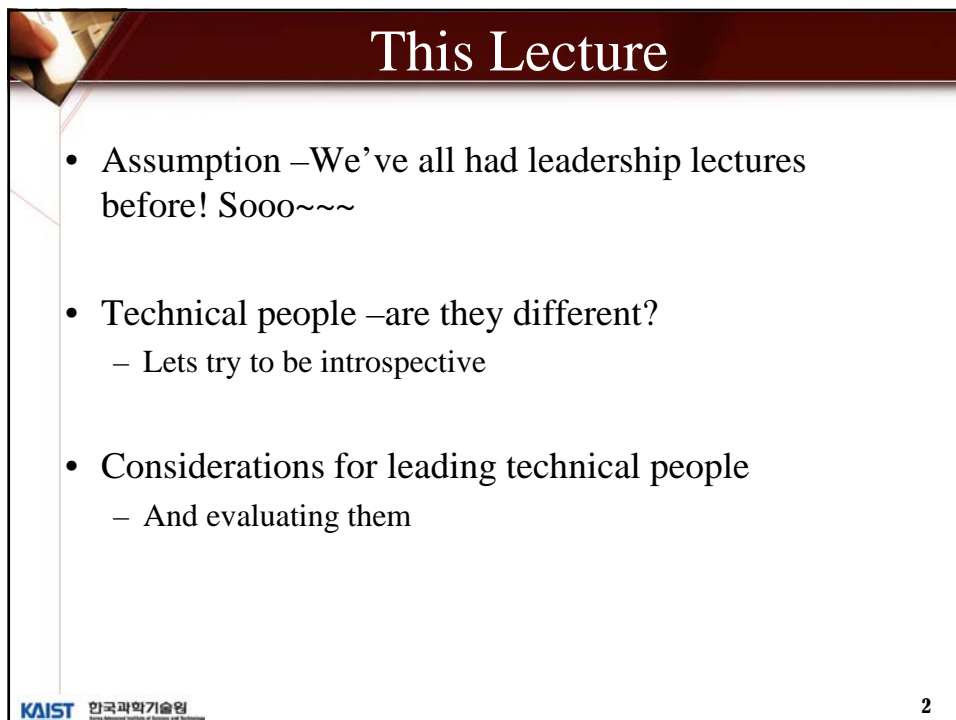
# Software Engineering Economics (CS656)

Managing Technical People

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한국과학기술원  
SINCE 1971



The slide has a dark red header with the title 'This Lecture'. The main content is a bulleted list. The KAIST logo is in the bottom left corner, and the number '2' is in the bottom right corner.

## This Lecture

- Assumption –We’ve all had leadership lectures before! Sooo~~~
- Technical people –are they different?
  - Lets try to be introspective
- Considerations for leading technical people
  - And evaluating them



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## Technical People Stereotype

- In slang may be called:
  - Techies, Tech Geeks, Geeks, Dweebs, Nerds...
  - Miss any?
- Associated with Computers? Not always
- Badly dressed (and that is subjective)
- Questionable hygiene
- Non sociable outside the “techie” domain
- Etc. ...

## But....

- They are deeply involved with the design, manufacture, care, test, install computers/software...
- While the butt of jokes, are indispensable in today's knowledge/communication oriented culture... **Software is everywhere in the quest to be better...**

## Lets dispel with stereotypes

**You will make your own impressions in**



The image shows two side-by-side photographs. On the left is the movie poster for 'The Interns', featuring two men in a professional setting. On the right is a scene from the movie 'Top Gun' showing several pilots in a cockpit. A red arrow originates from a black circle around the man on the left of the 'The Interns' poster and points to a black circle around a pilot in the 'Top Gun' scene.

CS major to Top Gun aviator, anything is possible...

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## Are technical people different?

*(How about software developers?)*

- What they like?
  - Affinity for technology?
  - Knowledge?
  - Ego?
  - Stubborn?
  - Team players?
  - What is the stereotype?
- And, does it matter to leadership

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## General Characteristics

Paul Glen thoughts from “Leading Geeks” 2003

- Affinity / respect for:
  - Technology
    - Games, shows, toys...problems with final ends
- The “rational”
  - Black and white –no grey areas
  - All decisions must be logically derived –Analytical
  - Don’t like emotional decisions
    - But, they are **emotional** about being rational

## General Characteristics...

- Affinity for ...:
  - Problem-Solution model...
    - all problems must have a solution, BUT like problems over the solution space?
    - Grey areas a problem
    - Continuous problems-flurry of activity to start....
- Don’t like rote work, non-creative
  - Dictated solutions
- The “flow”– [Mihaly Csikszentmihalyi]
  - From problem to solution..
  - Dislike “open ended”
  - Disruption of flow disastrous

## General Characteristics...

- **Communication:**
  - Self expression = communication?
    - Don't recognize miscommunication
  - Confusion over whether something is a fact, inference, assumption, and their implications
    - May be seen as rude bluntness
    - "Only an idiot would do that"
- **Don't suffer fools easily**
  - Value "smart" people
  - Quick minds, quick to comment
- **Need to get to the answer –bluntness**
- **Understanding of the business domain?**

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## General Characteristics...

- **Loyalty:**
  - To type of job, not necessarily company
  - Possibly to immediate manager, but not above
  - Distrust of "authority"
- **Groups**
  - Acceptance, peer recognition
  - Competition –yes with peers....does this hurt team work
  - Sharing of knowledge (ego)
    - Democratic?
- **But, like to work alone**
  - US society "heroes"
  - Tension with having to coordinate with others...
  - Have someone else do that "work"
- **Defacto leaders in groups**

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## General Characteristics...

- Authority
  - Tend to ignore rules/policies
    - P2P
    - Dress codes
  - Process?
    - Standards
  - Respect –when comparing domain knowledge
- Rebels?
- Work environment
  - “own” space
  - Periods without interruption
  - Rewards or perks....free food

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## what motivates technical people?

If the previous is true (in general)

- Internal or external motivators?
  - Artists?
  - Traditional management?
  - Technology prowess?
  - Need for “play”?
  - Work hard, play hard?
  - Engrossed in play as much as work?

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## Lets look at involvement in...

- Decision making
  - Opinions
  - Inward or outward?
- Consistency of environment
  - Reward / punishment system
  - Annoyances? Interruptions?
- Given authority
  - Over others?
- Tasks-Multi or selective/unitary

## De-motivators Glenn

- Exclusion from decision making
  - Hiding the big picture
- Inconsistency in rewards/punishment
  - “Pet,” focus on individuals
  - Responsible for issues not under their control
- Poor use of extrinsic motivators
  - Examples?
- Micro management
- Focus on tasks, the “how” instead of results
- Evaluations without criteria

## Glen's ideas –mentor, don't boss

- Manage by goals not quotas
  - Leadership/guidance not oversight/control
- Recognize technical competency
  - Use it effectively
  - Accentuate the positive, but don't BS
- Foster work environment –physical, annoyances
- Physical environment
- Promote interdependencies where appropriate

## Leading.....

- Obstacles
  - Conflict resolution (80/20 rule)
  - Bothersome tasks (HR), parking?
- Promote culture
  - Honesty, fairness, helping “team”
- Facilitate communication flows
  - Don't play/allow “I've got a secret”
- Manage ambiguity
- Patience
  - When to intervene?



## Sounding like...XP

**“Create an environment conducive to good work”**

- Open physical work environment, with space for private time.
- Emphasize what developers do best
- Iterative, short term goals
- Instant communication with customer
- Mentoring, a trainer, not a boss

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## Glen's performance measures

**How to evaluate technical people?**

- Technical competency
- Personal productivity –not quotas
  - Creativity?
- Ability to multi task
- Understanding business context, drivers
  - And be able to speak it
- Speaking with business side
  - And forging compromises

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## Measures

- Manage client relationships (MCE)
- Expand client relationships
- Managing/leading technical people
  - Training others, team player
- Delegation, work through others
  - Coach, mentor

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## Measures

- Play positive politics
  - Supportive of technical people
- Manage ambiguity
  - Use of what process?
- Manage time horizons
  - Plan the big picture

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## Other issues to aid success

- Define projects appropriately
  - Creative development, or routine maintenance?
- Projects as theater
  - Importance of defined relationships
- Group size
- Compel client focus
- Make the hard decisions
  - Identify and eject anchors when needed
  - BUT, remember, dealing with people

## What team structure is best for

*It depends depends...but what do you think?*

Pressman SEPA

- Decentralized Democratic
  - Participatory / Delegated
  - Just like Studio?
- Centralized Democratic
  - Participatory / Delegated / Decision maker
- Controlled Centralized
  - Authoritative / Delegated

## Now add Associated Project Factors?

- Difficulty of Problem –innovation?
- Size of Project –organization?
- Team Lifetime –cohesive or changing
- Modularization of Project –broken down
- Criticality of Safety / Reliability –control
- Rigidity of Delivery –hard schedule
- Communication needed for project

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## Glen's how to lead...

- Harmonizing content and context
  - Counter to inherent ambiguity
  - Need for order and consistency
  - Is this emotional?
  - Need to step back and ask “does this make sense”
    - New assignment, make a minimum 10KSLOC application using all that you learned in MSD....Due in 2 days....
    - Inconsistency with reality....?

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## Glen's how to lead...

### Using narratives and embodiment

- Narratives
  - We all like stories –bring together convoluted ideas, history
    - Case studies?
  - Use them to reinforce each other
- Embodiment
  - Can reinforce or hurt
  - Do as I say, not as I do.....

## Typical Narratives Glenn

- Navigating the organization's socio-political environment (s)
- Use of project artifacts-good and bad
- Own, peers, and subordinates' successes and failures, with introspection
- Past, present and future of....
  - Markets, companies, people, groups
- Values, ethics, priorities...
- Visions, strategies, ...

## Summary on Technical People

- Differences
  - Understanding your developers
- Capitalize on these
  - Rewards
  - Environment
  - Types of tasks
  - Off task time (Google “campus”)
  - Challenges

## Q & A

