

# Patents and Technology Evolution

## Altering Innovations and Innovators via Patent Influences

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# Introduction

- Evolution is a General Framework for Change in Complex Systems
- Technologies Evolve
  - Changes Emerge and Are Functionally Tested
  - No Overseeing Guidance Directs Progress
  - Results Realize Dynamic Match to User Needs
- Patents Change How Technologies Evolve

# Essential Features of Technology Evolution

- Variation via Invention
- Selection via Market Testing
- Propagation and Retention via User Acceptance Leading to Use As Basis for Further Designs

# Patent Impacts: Variation

- Patents Encourage Creation of More Outlier Designs
  - Enhancing Value of Designs Departing from Conventional Wisdom
- Mechanisms for Expanding Outliers
  - Shifting Research Targets
  - Promoting Recognition of Surprising Results
  - Encouraging Efforts to Create Practical Follow Ups to Theoretical Advances

# Patent Impacts: Selection

- Promote Outlier Designs in Commercial Development and Market Testing
- Potential for Patent Rewards Encourages
  - Investment in Product Refinement
  - Completion of Product Safety Studies
  - Development and Execution of Production
  - Initial Marketing Efforts
- Ensures Greater Market Testing of Outliers

# Patent Impacts: Strengthening Innovators Producing Outliers

- Patent Rewards for Successful Outlier Products Will Tend to Strengthen Producers of Outliers
- Advantaged Individuals and Organizations Will be Likely to Produce More Outliers
- Results Will be More Outlier Designs For Consideration and Testing in Markets
- Broader Range of Designs for the Public

# Improving Patent Impacts on Technology Evolution

- Changes to Promote Technology Variation in Evolutionary Processes
  - Broaden Patentable Subject Matter to Extend Impacts of Patent-Influenced Diversification Across More Innovations
  - Treat Rarely Replicated Advances as Nonobvious to Enhance Production and Ensure Inclusion in Evolution Processes

# Improving Patent Impacts on Technology Evolution (Cont.)

- Changes to Promote More Extensive or Effective Market Testing
  - Alter Utility, Specification, and Written Description Requirements to Expand Disclosures of Features Known to Inventors
  - Impose Working Requirements to Ensure Testing of New Advances

# Improving Patent Impacts on Technology Evolution (Cont.)

- Changes to Better Strengthen and Encourage Successful Producers of Outlier Technologies
  - Retain in Inventors an Inalienable Equitable Interest Providing for Payment of a Small Percentage of Profits Derived from Patents

# Conclusion

- ❑ Technology Evolution Improves Innovations via Variation, Selection, and Propagation
- ❑ Patents Assist by Increasing Variation, Emphasizing Outlier Testing, and Strengthening Innovators Producing Outliers
- ❑ Changes in Patent Laws Can Improve Impacts in All Three of These Areas