

# A Policy Framework for Knowledge-Based Capital

OECD Directorate for Science, Technology and Industry  
MIT Sloan School Center for Digital Business  
in association with the  
Board on Science, Technology, and Economic Policy of the National Academies

National Academy of Sciences  
2101 Constitution Ave.  
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Objective: Bringing together a group of leading academics and policy analysts, in an informal setting, this workshop aims to examine conceptual and policy frameworks for knowledge-based (intangible) capital. A deeper understanding of knowledge-based assets is a critical step toward advancing economic policy. Better understanding can help governments meet new economic challenges, avoid systemic dysfunction, and promote informed development and growth – rather than merely fine-tuning the status quo. The deliberations will feed into the conclusions of a wide-ranging two-year OECD project on knowledge-based capital and growth.

## Monday December 3 – Room 125

09:00-09:30     *Breakfast*

09:30-09:50     **Introduction: the Agenda for Knowledge-based Capital and Intangible Assets**

*Alistair Nolan, OECD*

*Brian Kahin, MIT*

09:50 -11:20     **Intangible Assets in Corporate Reporting and National Accounts**

Work on intangibles has emphasised their growing importance in business investment, as a source of market value, and as a measure of national capacity and potential. But while transparency and accountability contribute to investor confidence and the efficient operation of markets, there are mixed motivations regarding what to reveal, when, and at what cost. Progress has been made with categorisation and measurement at the level of national accounts (the Corrado-Hulten-Sichel framework), but major questions remain. For example:

- What are the economic characteristics that distinguish classes of knowledge-based assets from each other – and from tangible and financial assets?
- What are the known complementarities between asset classes? Are there substitution effects?
- Can intellectual property and other regulatory rights fit within a national accounts framework?
- How far can we progress in systematically measuring overall investment in knowledge-based capital?

### Panelists

*Chair: J. Steven Landefeld, U.S. Bureau of Economic Analysis*  
*Carol Corrado, Conference Board and Georgetown University*  
*Margaret Blair, Vanderbilt University*  
*Mariagrazia Squicciarini, OECD*

11:20-11:35 *Coffee break*

### 11:35–13:10 **Transformation of Ownership and Capital**

Analysis of intangible assets has focused on problems of tangibility and visibility while assuming that “assets” are exclusively owned. However, the non-rival nature of knowledge opens up many alternatives to unified control, while creative use of contracts, instruments, and special-purpose entities has introduced alternative means of partitioning assets and managing risk. Complex digital products, systems and ecosystems often feature variations on shared control such as modularity, platforms, and standards.

- How are criteria of intangibility affected by technology and other developments?
- What is missed by confining intangible assets to the conventional definition of “asset”?
- How does putting emphasis on “knowledge-based capital” inform measurement and analysis?
- How can flows of knowledge, managed and unmanaged, be traced as alternative or complementary to priced transactions?

### Panelists

*Chair: Dan Andrews, OECD*  
*Andrew Updegrove, Gesmer Updegrove LLP*  
*Carliss Y. Baldwin, Harvard Business School*  
*Mark Dutz, World Bank*

13:10 – 14:00 *Lunch break*

### 14:00 – 15:40 **Digitisation**

Digitisation has played a multifaceted role in expanding the scope and significance of knowledge-based assets. Digitisation expands the nature of knowledge, extends the reach of information, and leverages the economic footprint of financial and knowledge-based assets. It invigorates social and relationship capital and generates consumer surplus. It has accelerated the creation, management and application of knowledge, lowered transaction costs, and enabled large-scale markets for financial and tangible products.

- How does digital technology enable better measurement and accounting for different categories of intangibles?
- How do investments in IT, including software and data, interact with investments in intangibles?
- How can investments in IT and knowledge-based assets enhance or transform the process of innovation?

### **Panelists**

*Chair: Detlef Eckert, European Commission*

*Michael Mandel, Progressive Policy Institute*

*Marshall Van Alstyne, Boston University/MIT*

*John King, University of Michigan*

15:40-16:00     *Coffee break*

16:00 –17:40     **Human Capital: Fluidity in Space and Time**

Human capital is the earliest, most pervasive and most important form of knowledge-based capital – and is intimately linked to exploitation of other forms of knowledge-based capital. While human capital can be credentialed and contracted for, it is in large part latent, tacit, and imperfectly controlled. Many aspects and levels of human capital are often missed in the conventional discussion of jobs and skill, but deeper attention has been triggered by a wide set of policy issues that demand a broad perspective, including the growing stratification of skills and income; mobility across borders and employers; the need for adaptive and hybrid competencies; and the mixed effects of technology on the workforce.

- What different levels and competencies of human capital should be identified and measured?
- How should investment in human capital be organised among individuals, firms, and public funds?
- How are globalisation, technology, and economic conditions reshaping supply and demand for human capital?

### **Panelists**

*Chair: Katharine Abraham, Council of Economic Advisers*

*Javier Miranda, U.S. Census Bureau*

*Kathryn Shaw, Stanford University*

*Matthew Marx, MIT*

*Reception and Buffet Dinner – Members Room, National Academy of Sciences*

## Tuesday 4<sup>th</sup> December 2013 – Room 250

08:00 – 08:30 *Breakfast*

### 08:30 – 10:00 **Intellectual Property: Knowledge Assets, Regulatory Rights or Legal Obligations?**

In contrast to human capital, intellectual property appears to emulate many desirable characteristics of tangible assets. Patents, in particular, are codified, bounded, and tradable, although the value and role of patents is industry and context dependent. Patents also appear as embodiments of new knowledge that are intended to promote disclosure and knowledge transfer, yet transaction costs are high, boundaries are often ill-defined, and legal knowledge about patents must be mediated through specialists. While patents are visibly linked to products in some markets (pharmaceuticals), they are largely ignored prior to the threat of litigation in other markets (software).

- How should accounting for knowledge-based assets recognise differences between different forms of intellectual property (patent, copyright, trade secrets), differences in usage and practice across industries, and the use of direct and indirect subsidies?
- How does the value and use of patents change with aggregation and scale?
- Determining royalties for patent infringement often involves weighing patents against tangible assets; how can this calculus be made without the distorting the relationship between asset classes?
- What are the likely effects of efforts, private and public, to valorise patents?

#### Panelists

*Chair: Tony Clayton, United Kingdom Intellectual Property Office*

*Colleen Chien, Santa Clara University*

*Arti Rai, Duke University*

*Peter S. Menell, University of California, Berkeley*

10:00-10:15 *Coffee break*

### 10:15–11:30 **Taxing Intangibles in the Global Economy**

Conventions have evolved for tax treatment of tangible assets, such as distinctions between ad valorem and income taxes, active vs. passive income, and source vs. residence. Certain knowledge-based assets benefit from favoured treatment, while nominal and beneficial ownership can be readily transferred across borders, and the creative use of licensing to avoid taxes has recently attracted scrutiny. Yet intangible assets can be sources of income and economic advantage. Can – and should – they be better tied to territorial interests.

- How should intangibles fit into jurisdiction-based tax systems?
- Should varieties of knowledge-based assets be exempted or subsidised, as is the case for research and experimentation?
- How can public benefits of favourable treatment be localised?
- How should tax policy account for differences in territorial value and effects?
- Should transparency or harmonisation be favoured at the international level?

### Panelists

*Chair: Rosanne Altshuler, Rutgers University*

*Hugh Ault, Boston College Law School*

*Mihir Desai, Harvard Business School*

*Steven Clark, OECD*

11:30-11:45      *Coffee break (pick up box lunches)*

11:45-13:15      **Roundtable: Policy Design for Knowledge-based Capital**

Knowledge is acclaimed as a resource in many policy contexts, but the breadth and complex nature of knowledge makes it difficult to deal with knowledge-based capital as a coherent policy domain or within a manageable institutional framework.

- What overarching themes and lessons can be drawn from a close look at KBC issues? What new approaches to economic policy do they suggest?
- Are policy institutions adequate to the task? How can OECD and others best contribute?

### Panelists

*Chair: Brian Kahin, MIT*

*Joshua L. Rosenbloom, National Science Foundation*

*Detlef Eckert, European Commission*

*Charles Hulten, University of Maryland*

*Stephen Merrill, National Academy of Sciences*

*Matthew Gerdin, U.S. State Department*

13:15      **Closing Remarks and Next Steps**

*Andrew Wyckoff, OECD*