

KIT Karlsruhe, 7th May 2014

Sustainability 2014: Future Urban Development at Different Scales

11th international Conference, Forum on Sustainable Technological Development in a Globalizing World

Goals and Benefits of Rating Systems and Certification in Sustainable Urban Development

- Rating systems and certification as counteracting institutions to the effects of information asymmetry and quality uncertainty in urban development projects and to promote sustainable development goals -

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DSK Deutsche Stadt- und Grundstücksentwicklungsgesellschaft mbH & Co. KG, Düsseldorf



DSK Deutsche Stadt- und Grundstücksentwicklungsgesellschaft

1. Certification Systems

2. Certifying Urban Development Projects

3. Goals and Benefits of of Rating Systems and Certification

4. Quality Uncertainty and Information Asymmetry in Urban Development Projects

5. Conclusion



Certification

- Third-party verification of conformity with specified requirements
- Combined with Labeling

Different forms

- Certification of products
- Certification of services
- Certification of personal skills
- Conformation of organizations / management systems (QMS)

Target groups

- Information between business / contracting partners [B-to-B]
- customer / consumer information [B-to-C/ G-to-C]
- regulatory control [B-to-G]

Certification systems

- Private systems (company-own)
- Semi-public systems (association, NGO)
- State-run systems

BREEAM Communities

bre

BREEAM Communities helps developers, local authorities and master planning teams improve, measure and certify the sustainability of developments at the neighbourhood scale and beyond.

Climate & Energy



Resources



Transport



Ecology



Business



Community



Placemaking



Buildings



LEED for Neighborhood Development



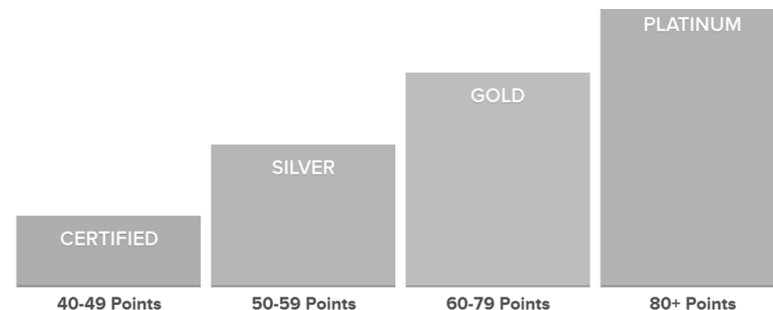
SMART
GROWTH

NEW
URBANISM

GREEN
BUILDINGS



IMPROVED QUALITY OF LIFE



LEED® for Neighborhood Development

Total Possible Points 110***

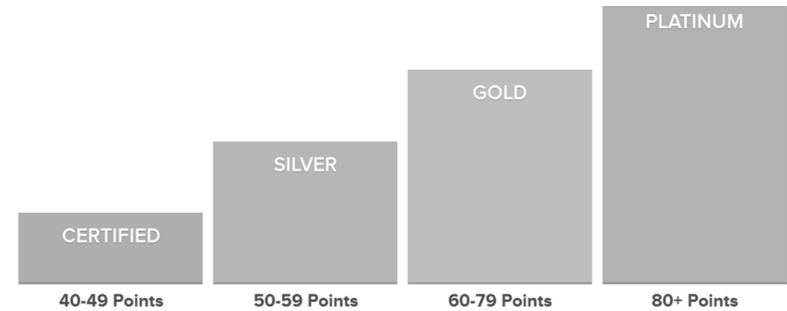
	Smart Location & Linkage	27
	Neighborhood Pattern & Design	44
	Green Infrastructure & Buildings	29

* Out of a possible 100 points + 10 bonus points

** Certified 40+ points, Silver 50+ points, Gold 60+ points, Platinum 80+ points

	Innovation & Design Process	6
	Regional Priority Credit	4

LEED for Neighborhood Development



LEED® for Neighborhood Development

Total Possible Points** 110*

Neighborhood Development:

Applies to new land development projects or redevelopment projects containing residential uses, nonresidential uses, or a mix. Projects can be at any stage of the development process, from conceptual planning to construction.

IMPROVED QUALITY OF LIFE

40+ points, Silver 50+ points, Gold 60+ points, Platinum 80+ points

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DGNB

Deutsche Gesellschaft für nachhaltiges Bauen e.V.
German Sustainable Building Council

German Sustainable Building Council - New urban districts, New trading / ind. estates

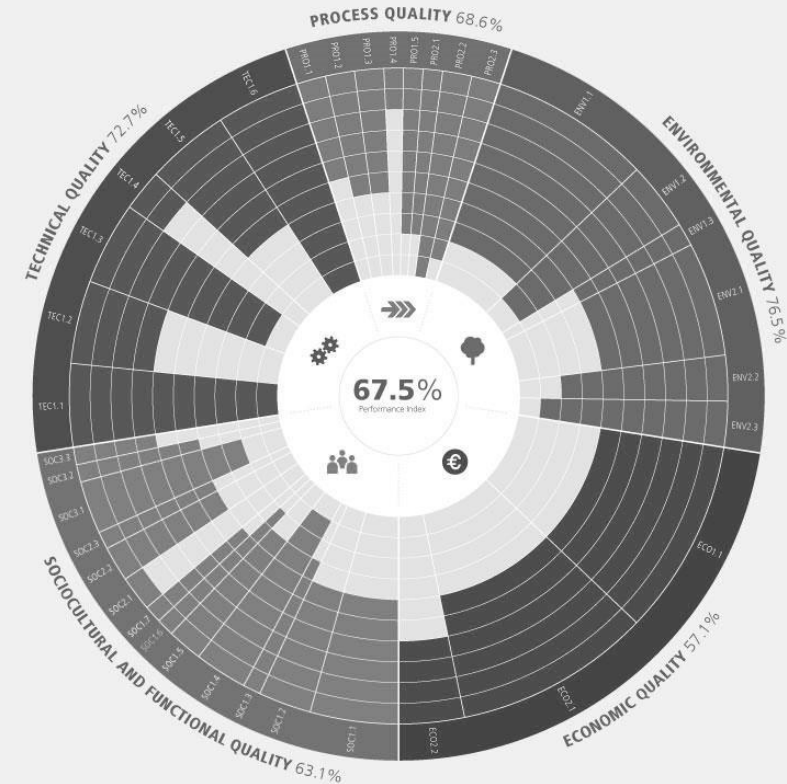




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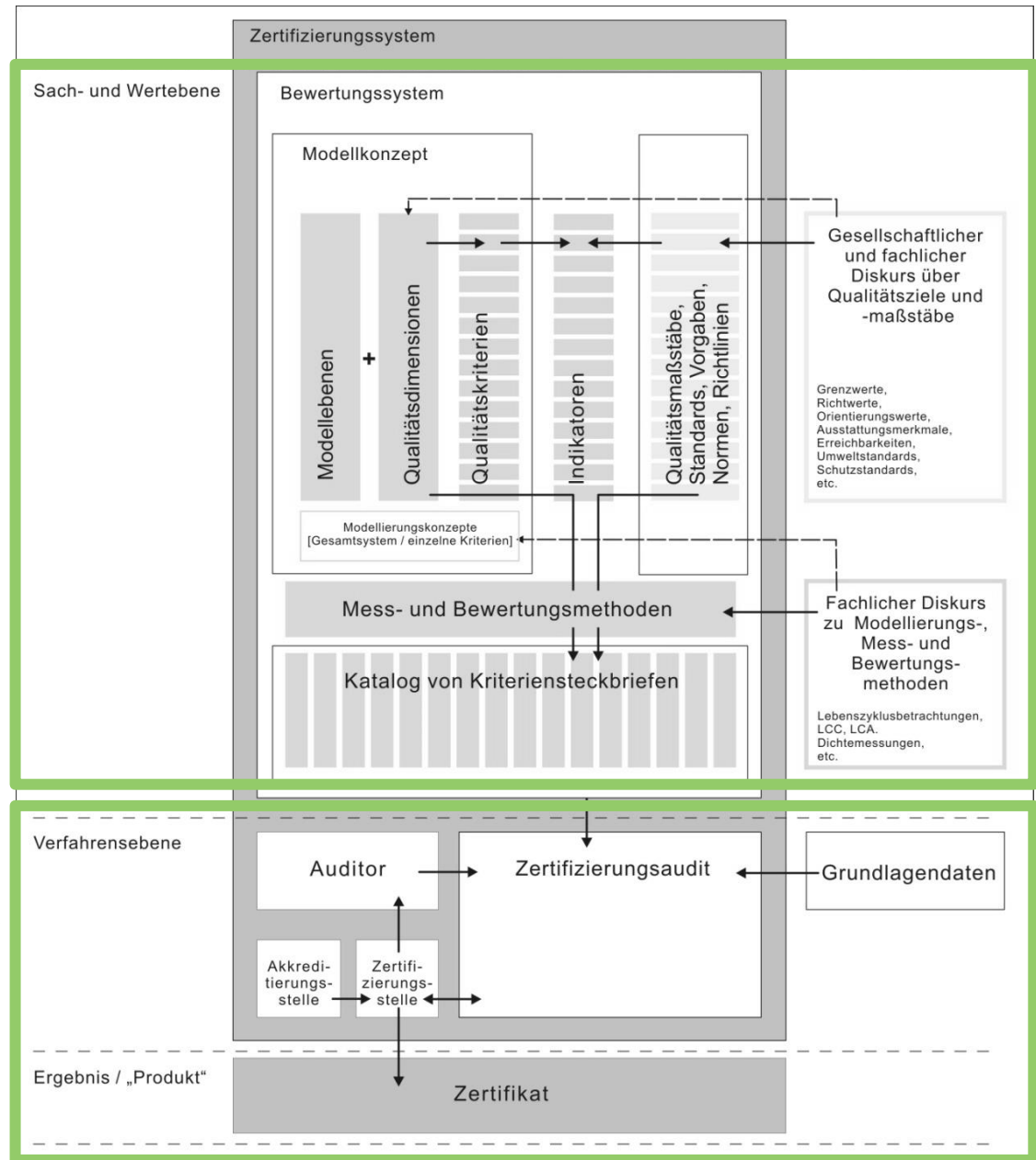


Elements certification system

Criteria catalog



Assessment / audit and certification process

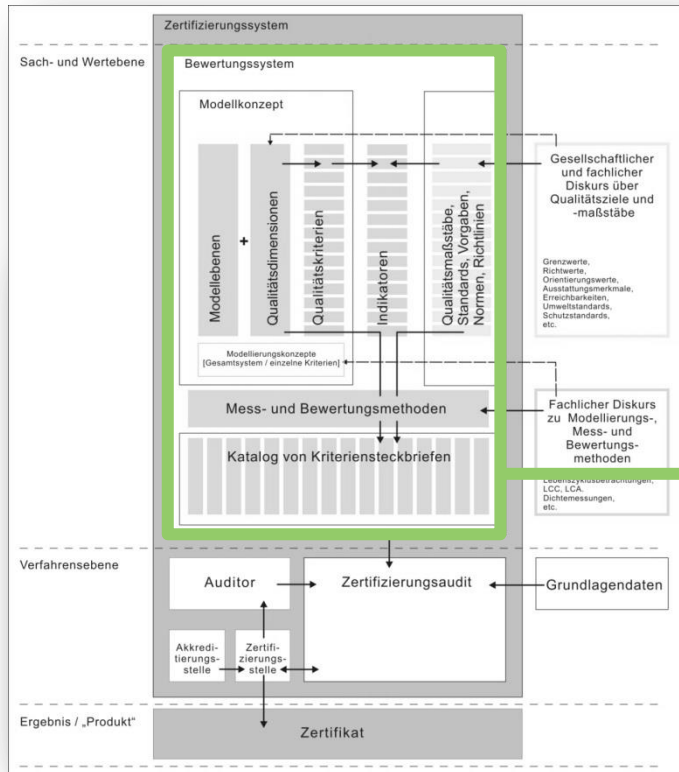


[Hogen (2010): Zertifizierung von Stadtquartieren]

2. Certifying Urban Development Projects

CORE CATALOG FOR BUILDINGS

CORE CATALOG FOR URBAN DISTRICTS



Environmental Quality

- Life Cycle Assessment
- Local Environmental Impact
- Environmentally Friendly Material Production
- Primary Energy Demand
- Drinking Water Demand and Wastewater Volume
- Land Use
- Life Cycle Assessment
- Water and Soil Protection
- Change in City District Climate
- Biodiversity and Interaction
- Consideration of Possible Environmental Impacts
- Land Use
- Total Primary Energy Demand and Renewable Primary Energy
- Energy-Efficient Development Structure
- Infrastructure with Low Resource Consumption, Groundwater Management
- Local Food Production
- Water Cycle

Economic Quality

- Building-Related Lifecycle Costs
- Value Retention, Suitability for Third Party Use
- Lifecycle Costs
- Fiscal Effects on Municipality
- Value Retention
- Efficient Use of Space

Sociocultural and Functional Quality

- Thermal Comfort
- Indoor Air Quality
- Acoustic Comfort
- Visual Comfort
- User Influence on Building Operation
- Quality of Outdoor Spaces
- Safety and Security
- Handicapped Accessibility
- Efficient Use of Floor Area
- Suitability for Conversion
- Public Access
- Cycling Convenience
- Design and Urban Planning Quality through Competition
- Integration of Public Art
- Site Features
- Social and Functional Diversity
- Social and Labour Infrastructure
- Objective / Subjective Security
- Quality of Open Areas in Public Spaces
- Noise Protection
- Proportion of Open Areas
- Handicapped Accessibility
- Occupancy Flexibility and Development Structure
- Adaptation to Urban Development Plan
- Urban Planning Design
- Use of Existing Buildings
- Public Art

CORE CATALOG FOR URBAN DISTRICTS

Environmental Quality

- IT and Communication Infrastructure
- Energy Technology
- Waste Management
- Rainwater Management
- Dismantling, Sorting, and Recycling of the Infrastructure
- Maintenance, Servicing, Cleaning
- Quality of Transport Systems
- Quality of Road Infrastructure
- Quality of Public Transport Infrastructure
- Quality of Cycling Infrastructure
- Quality of Pedestrian Infrastructure

Economic Quality

- Participation
- Concepts Developed in Competitive Bids
- Integrated Planning
- Community Involvement
- Controlling
- Environmental Impact of Construction Site / Construction Process
- Marketing
- Quality Assurance and Monitoring

Sociocultural and Functional Quality

- Integrated as a Criterion for Assessment

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Entwurf Stadtquartiere		Version 2010
Steckbrief-Nr.:	E1	System-Nr.:
Bezeichnung: Risiken für die lokale Umwelt		

Gültig für Zertifizierungsversion		Version 2010
Bewertungsgegenstand		Stadtquartiere
Zuordnung	Hauptkriteriengruppe	Ökologische Qualität
	Kriteriengruppe	Wirkungen auf die lokale Umwelt
Anwendung für	Bewertungszeitpunkt	
	Geltungsbereich	Stadt ☐ Umfeld ☒ Quartier ☐

Relevanz und Zielsetzungen	Ziel ist es, die Einwirkungen baulicher Tätigkeit auf die lokale Umwelt während und nach der Fertigstellung des Quartiers nach dem Prinzip der Vermeidung, Verminderung, Ausgleich (Kühling, 1989) zu minimieren. Dazu zählt, dass die geplante Flächeninanspruchnahme durch Bebauung und Geländemodellierung möglichst wenig negative Auswirkungen auf die Umwelt haben bzw. entsprechende Ausgleichsmaßnahmen vorgeschlagen werden Dazu zählen eine bewusste Baustellenaktivität, bei der Geräte- und Materialeinsatz zu geringstmöglicher Emissionsbelastung führen, Baustellenabfall entsprechend gelagert und entsorgt wird und Habitats aktiv geschützt werden Dazu zählt auch, daß das Quartier nach der Fertigstellung energieeffizient und umweltfreundlich operiert.
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Beschreibung, Kommentar	Zum Erreichen und der Bewertung der Ziele müssen folgende Unterlagen vorliegen: - Ermittlung der mittelbaren und unmittelbaren Auswirkungen auf die lokale Umwelt - Beschreibung der Auswirkungen - Bewertung der Auswirkungen und vorgesehene Vermeidungs- bzw. Ausgleichsmaßnahmen Dabei sollen entsprechende Behörden bzw. Plangrundlagen hinzugezogen, dokumentiert und aufbereitet werden (siehe Dokumente, Normen und Richtlinien)
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einzubeziehende Aspekte	
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Entwurf Stadtquartiere 2010

www.dgnb.de | 03.05.2014

16.07.2010

2. Certifying Urban Development Projects

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CORE CATALOG FOR URBAN DISTRICTS

Technical Quality

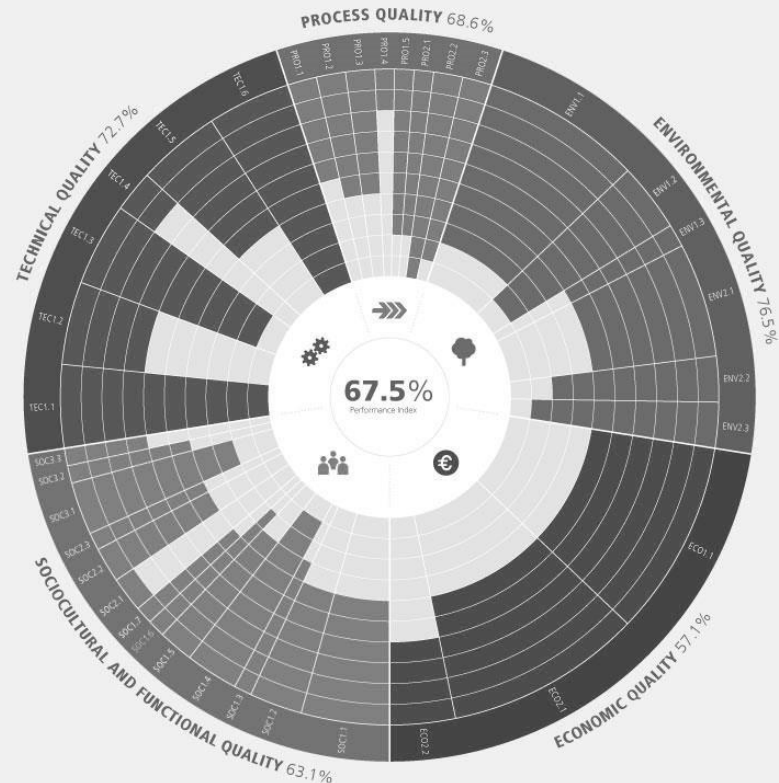
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Process Quality

- Participation
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- Marketing
- Quality Assurance and Monitoring

Design Quality

- Integrated as a Criterion for Assessment



**Total
Performance
Index**

**Minimum
Performance
Index**

Awards

from 50 %

35 %

Bronze



from 65 %

50 %

Silver



from 80 %

65 %

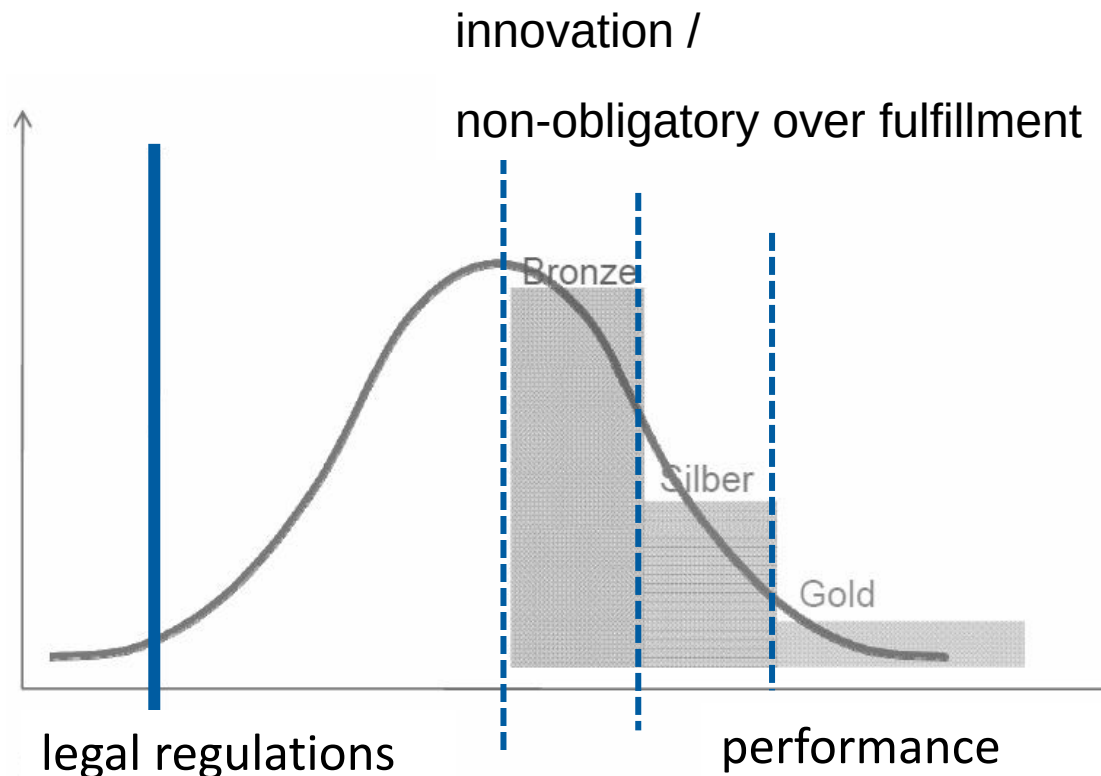
Gold



www.dgnb.de | 03.05.2014

1. Certification as a system of setting quality standards and awarding
2. Awarding leads to voluntary high performance and innovation and promotes sustainable development goals

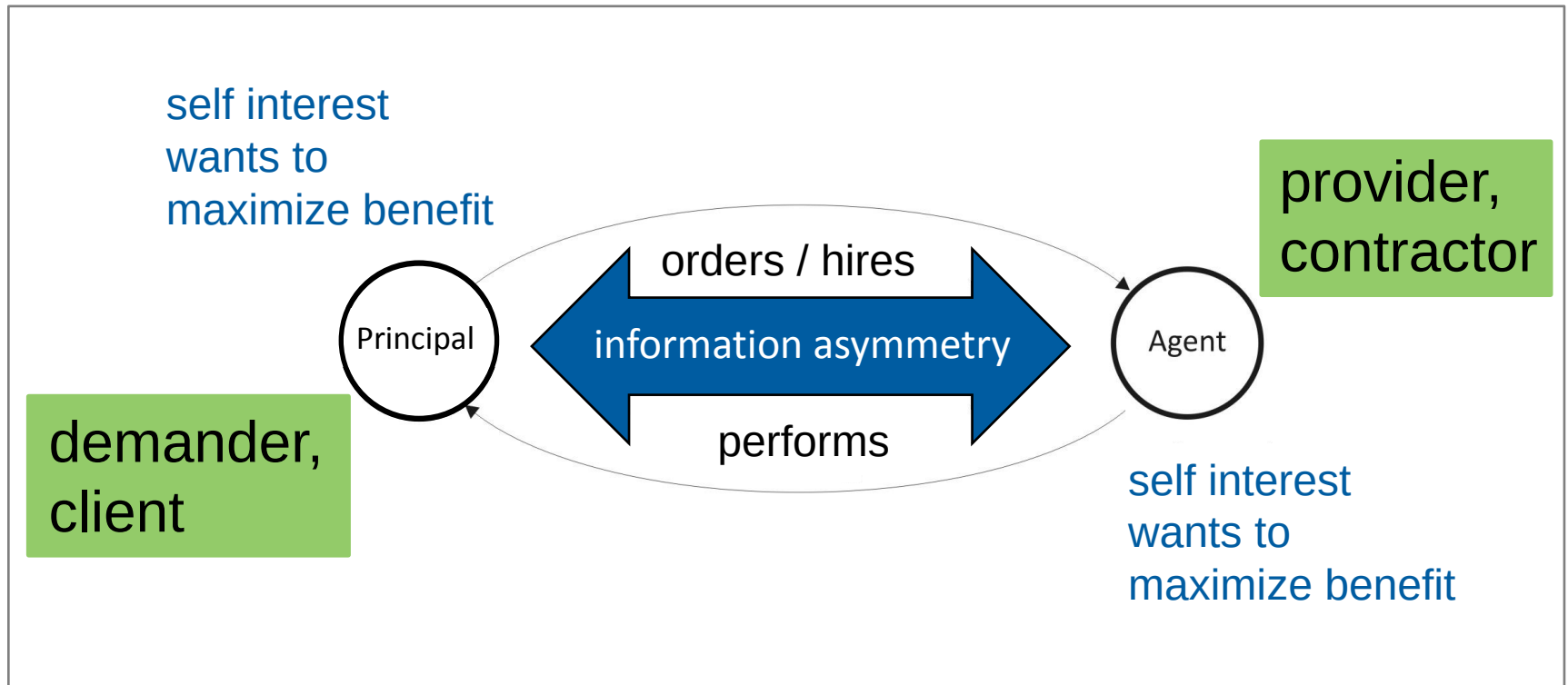
system of incentives:



1. Certification as a system of setting quality standards and awarding
2. Awarding leads to voluntary high performance and innovation and promotes sustainable development goals
3. Certification minimizes problems of quality uncertainty and transaction costs

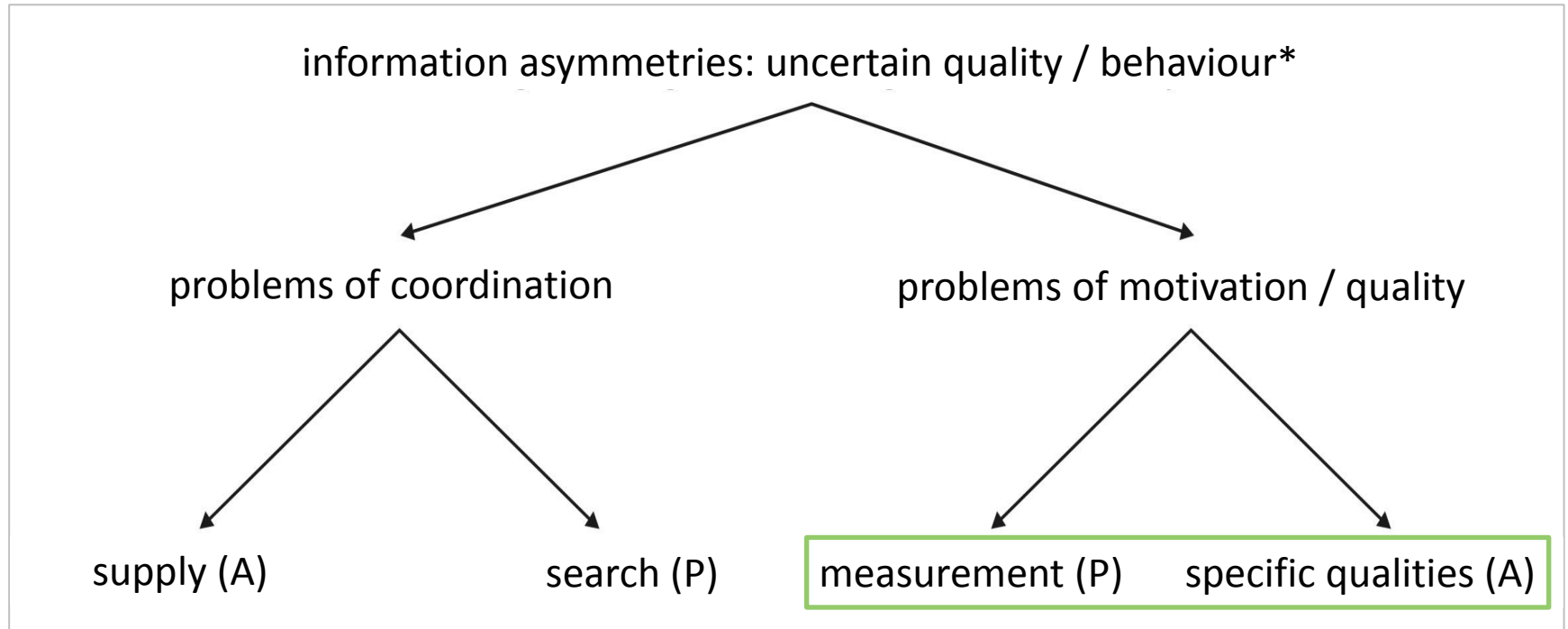
Quality uncertainty: Theoretical framework and mechanisms (Principal-Agent-Theory)

- information asymmetries
- uncertain quality / behaviour



[Hogen 2014]

Information asymmetries and uncertain quality / behaviour cause several problems:

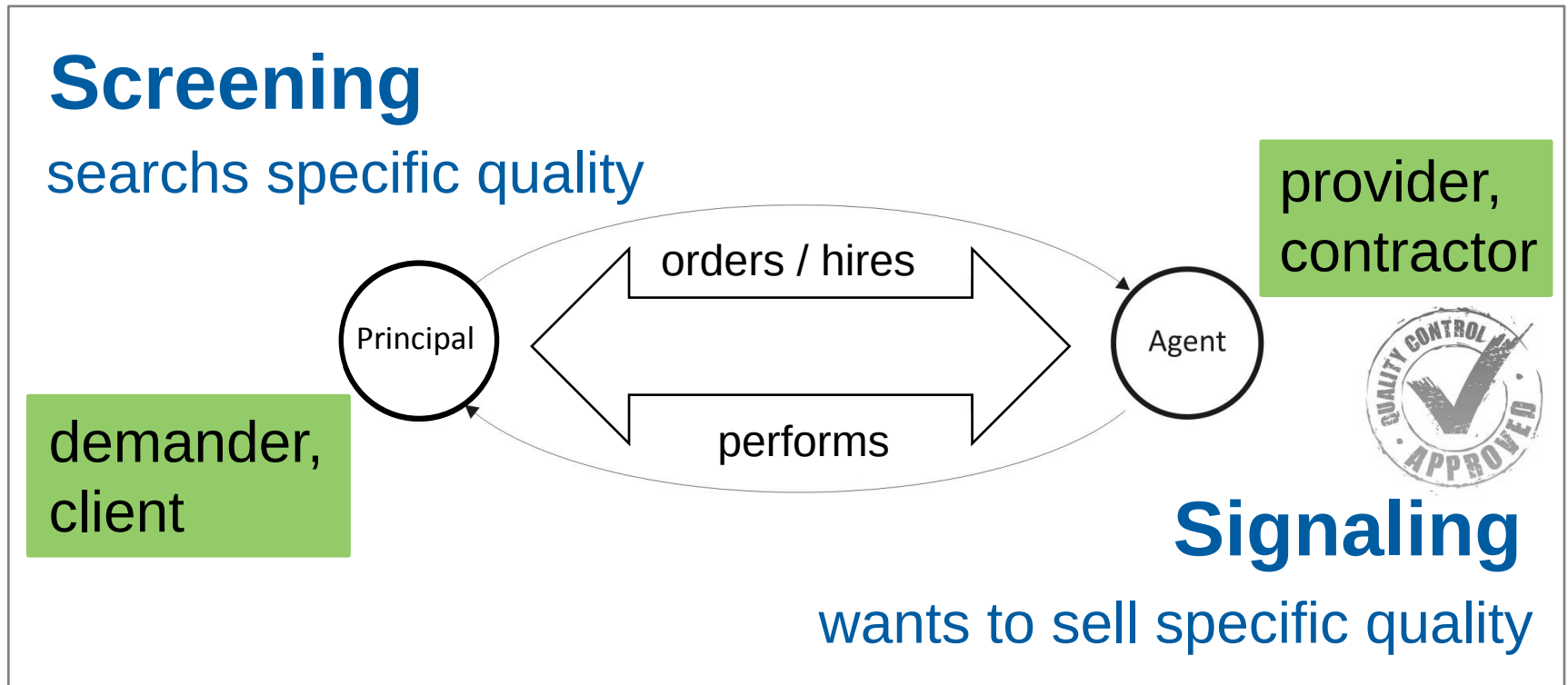


[HOGEN 2014, GÖBEL 2002]

* hidden characteristics, hidden action, hidden information, hidden knowledge, hidden intention

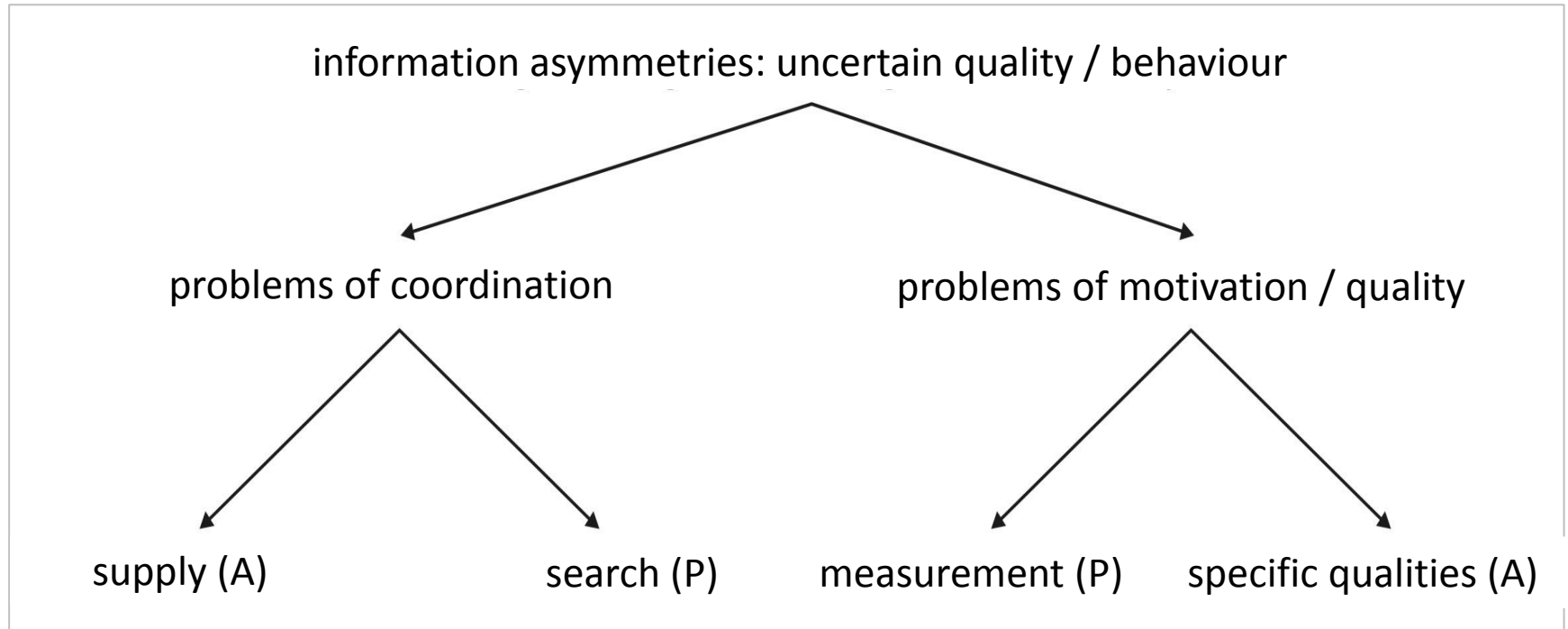
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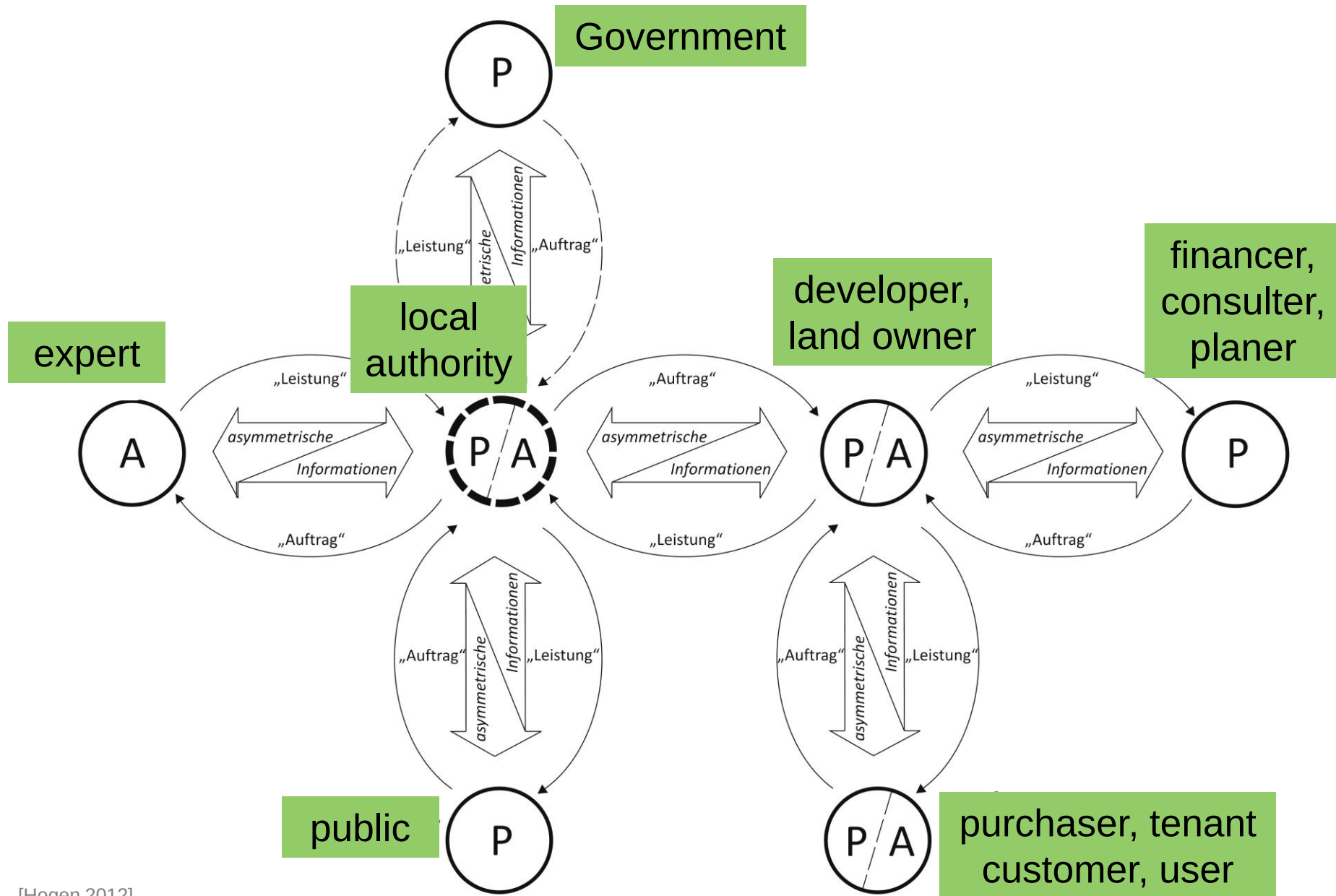


[HOGEN 2014, GÖBEL 2002]

- Certification allows easily **searching and measurement**
- Standardized assessment systems are basis of **information exchange** and
- help project partners to **coordinate quality goals**

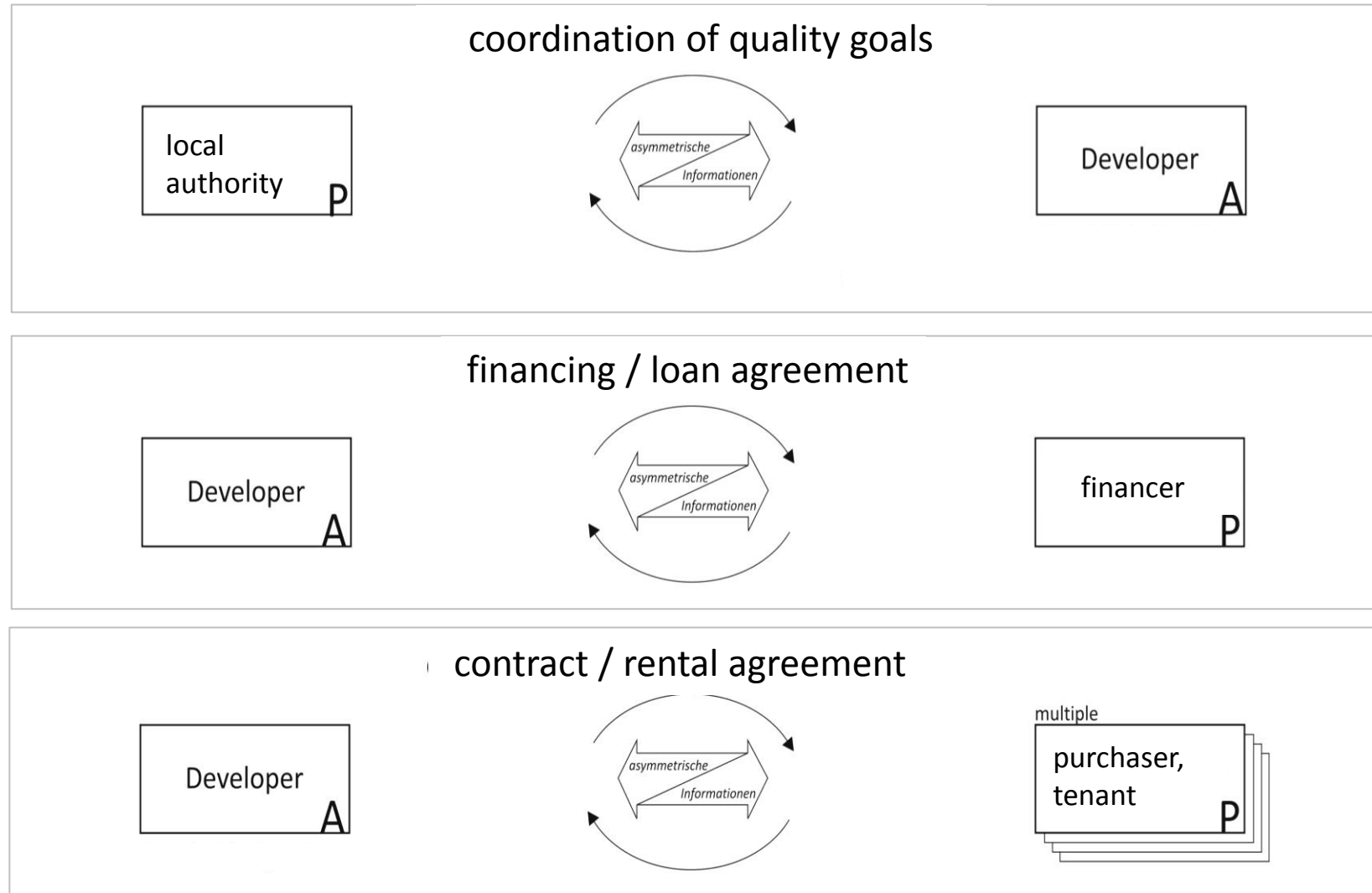
4. Quality Uncertainty and Information Asymmetry in Urban Development Projects

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[Hogen 2012]

Selected occasions in urban development projects / site development:



[HOGEN 2012]

Rating systems and certification as an instrument to ...

- set quality standards
 - discuss and coordinate goals in planning processes
 - increase process qualities
 - easily measure and compare the quality of a contracting partner, its performance or products
 - estimate economic risks / financing risks
 - promote specific qualities and market opportunities of high performance projects
 - award voluntary high performance and innovation
-
- Problems of standardization (individual values, requirements and demands)
 - Methodological problems of assessment (reduction, measurability)
 - Possible external effects / competition of districts

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