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1

2 Innovation Policies (vis-à-vis Practice 3 and Theory)

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8 Synonyms

9 Governance; Innovation policy; Innovation prac-
10 tice; Innovation theory

11 Innovation-driven economic and social
12 change is a significant characteristic of today's
13 economies and a driving force for international
14 knowledge production, competition, and trade;
15 this holds certainly for industrialized countries,
16 but increasingly also for a growing number of late
17 industrializing countries. National, often also
18 regional, governments pursue, more or less
19 explicitly, *innovation policies*, which can be
20 defined as "as the integral of all state initiatives
21 regarding science, education, research, technol-
22 ogy policy, and industrial modernization,
23 overlapping also with industrial, environmental,
24 labor, and social policies. Public innovation pol-
25 icy aims to strengthen the competitiveness of an
26 economy or of selected sectors, in order to
27 increase societal welfare through economic suc-
28 cess" (Kuhlmann 2001, 954). Public innovation
29 policies reflect the "innovation culture" of
30 a given society, not at least characterized by the

particular interrelation of economic, knowledge- 31
producing, and policymaking actors and organi- 32
zations ("Triple Helix"), at various levels of 33
action ("multilevel innovation system"). 34

The concept of public innovation policy is 35
built on the assumption that "innovation" – 36
a perceived or intended process of material, 37
social, and often also cultural change, incremen- 38
tal or disruptive – can be "governed." The present 39
entry (largely drawing on Kuhlmann 2007) offers 40
four considerations of this supposition: First, an 41
illustration will be presented of *why* the *govern- 42*
ance of innovation is an issue of concern and 43
that there are governance routes of different char- 44
acter and quality. Second, three forces of the 45
governance of innovation will be addressed: 46
The (1) dynamics of *innovation in practice*, the 47
(2) role of *public policy*, and (3) the role of 48
Innovation Studies, as "theory in action." In 49
order to illustrate the mutual interaction of the 50
three forces, a metaphor will be used (following 51
Kuhlmann 2007; Kuhlmann et al. 2010). Innova- 52
tion practice, policy, and theory can be seen as 53
"*partners on a dancing floor*," moving to the 54
varying music and forming different configura- 55
tions (see Figure 1). Taking a closer look at the 56
dance floor, one can see two of the dancers, 57
innovation practice and policy, arguing and nego- 58
tiating about the dance and music while the third, 59
theory – not always, but often and to an increas- 60
ing extent – provides the other two partners with 61
arguments and sometimes also with new music: 62
Practice and policy increasingly have expecta- 63
tions vis-à-vis the contribution of social science- 64

65 based intelligence to their dance. Hence, the third
66 consideration: (3) *Innovation Studies*, by now
67 a widely respected academic field of interdis-
68 ciplinary knowledge and research, may experience
69 a tension between participating in the dance and
70 academic discourse at arm's length to practice.
71 Yet, there is a chance that Innovation Studies can
72 cope with this tension and, in fact, make it
73 a source of increased *reflexivity*. The fourth con-
74 sideration will (4) exemplify some ways of delib-
75 erate interaction of Innovation Studies as theory
76 in action, taking a closer look at “*fora*” for the
77 *debate of innovation issues* and the role of
78 research-based “strategic intelligence.”

79 **First Consideration: Why “Governance** 80 **of Innovation”?**

81 A better understanding of the governance of inno-
82 vation both in terms of driving forces and with
83 respect to the room for maneuver in
84 policymaking is a precondition of successful
85 practical attempts at shaping the character and
86 direction of innovation processes or even chang-
87 ing them.

88 Innovation occurs within or vis-à-vis evolving
89 “regimes.” The term *regime* was first introduced
90 by Nelson and Winter (1977) to characterize pat-
91 terns in technical and economic change such as
92 the frameworks of engineers in an industry con-
93 stituting the basis for their search activities. Van
94 den Ende and Kemp (1999) define
95 a technological regime “as the complex of scien-
96 tific knowledge, engineering practices, produc-
97 tion process technologies, product
98 characteristics, user practices, skills and proce-
99 dures, and institutions and infrastructures that
100 make up the totality of a technology” (835). Rip
101 and Kemp (1998) add to the “grammar” of
102 a regime explicitly the policies and actions of
103 other innovation actors including public
104 authorities.

105 Regimes differ in terms of the character and
106 quality of their *governance*. The notion of gover-
107 nance is used here as a heuristic, borrowed from
108 political science, denoting the dynamic interrela-
109 tion of involved (mostly organized) actors, their

resources, interests and power, fora for debate 110
and arenas for negotiation between actors, rules 111
of the game, and policy instruments applied (e.g., 112
Kuhlmann 2001; Benz 2006; Braun 2006). Inno- 113
vation governance profiles and their quality and 114
direction are reflected not at least in the character 115
of public debates between stakeholders, 116
policymakers, and experts. Think of the debates 117
on genetically modified organism (GMO), or 118
debates on the governance of an emerging, 119
cross-cutting innovation field such as 120
“nanotechnology.” 121

In a report of a European Expert Group on 122
“Science and Governance” (Felt et al. 2007), 123
two basic types of what the authors call 124
“regimes” of innovation were identified: 125

- The regime of “*economics of technoscientific* 126
promise”: Promises to industry and society, 127
often far reaching, are a general feature of 128
technological change and innovation, particu- 129
larly visible in the mode of governance of 130
emerging technosciences: biotechnologies 131
and genomics, nanotechnologies, neurosci- 132
ences, or ambient intelligence, all with typical 133
characteristics: They require the creation of 134
a fictitious, uncertain future in order to attract 135
resources and political attention. They come 136
along with a diagnosis that “we” are in a world 137
competition and that “we” (Europe, the USA, 138
etc.) will not be able to afford “our” social 139
model if “we” don’t participate in the race 140
and become leaders in understanding, fuel- 141
ling, and exploiting the potential of 142
technosciences. The regime “works with 143
a specific governance assumption: a division 144
of labour between technology promoters and 145
enactors, and civil society. Let us (= pro- 146
moters) work on the promises without too 147
much interference from civil society, so that 148
you can be happy customers as well as citizens 149
profiting from the European social model” 150
(Felt et al. 2007, 25). Under this regime of 151
technoeconomic promises, politics, science, 152
and industry take the lead, while the innova- 153
tion needs and expectations represented in the 154
society appear to remain in a rather passive 155
consumer role. 156

157 • The second regime, “*economics and socio-*
 158 *politics of collective experimentation*,” is
 159 characterized by emerging or created situa-
 160 tions which allow to try out things and to
 161 learn from them. The main difference with
 162 the other regime is that “experimentation
 163 does not derive from promoting a particular
 164 technological promise, but from goals
 165 constructed around matters of concerns and
 166 that may be achieved at the collective level.
 167 Such goals will often be further articulated in
 168 the course of the experimentation” (Felt et al.
 169 2007, 26f). This regime requires a specific
 170 division of labor in terms of participation of
 171 a variety of actors, investing because they are
 172 concerned about a specific issue (see also
 173 Callon 2005). “Users matter” in innovation
 174 (e.g., Oudshoorn and Pinch 2003). Examples
 175 of such demand- and user-driven innovation
 176 regimes include the information and commu-
 177 nication sector (where the distinction between
 178 developers and users is not sharp), or the
 179 involvement of patient associations in health
 180 research (e.g., Boon et al. 2008). The concept
 181 of “open innovation,” debated around the
 182 user-driven development of non-patented
 183 Open Source software, and more generally in
 184 Chesbrough’s influential book (2003), is
 185 largely overlapping with the collective exper-
 186 imentation concept. The governance of such
 187 regimes is precarious since they require long-
 188 term commitment of actors who are not
 189 always equipped with strong organizational
 190 and other relevant means, and there is always
 191 some room for opportunistic behavior. Never-
 192 theless, the promise is innovation with sustain-
 193 able effects.
 194 In other words, the governance of innovation
 195 and related policies are neither neutral nor inno-
 196 cent. The precarious governance of the experi-
 197 mentation regime or the missing emphasis on
 198 stakeholder inclusion and demand-orientation
 199 indicate that strategists and policymakers may
 200 run the risk of missing valuable opportunities
 201 offered through variety and experimentation in
 202 the development of innovation processes. This
 203 leads to the second consideration.

**Second Consideration: Three
 Interrelated Forces of Innovation
 Governance and Their Dance**

204
 205
 206

An analysis of the governance of innovation has
 to cope with at least *three major forces*:
First force: While since the 1950s in econom-
 ics and sociology “*science*,” “*technology*,” and
 “*innovation*” processes were plotted as
 a sequence of activities of institutionally and
 organizationally distinct units (“linear
 approach”; Bush 1945), this has changed in the
 course of the 1980s and 1990s. Today science,
 technological development, and innovation are
 conceived by most scholars as *overlapping fields*
 of social practice, forming a shared “space” of
 interactivity, driven by knowledge dynamics,
 economic forces, and framed by inherited insti-
 tutions. Most concepts emphasize the interactive
 character of idea generation, scientific research,
 development, and introduction of innovative
 products and processes into markets or other
 areas of use – take as a simplifying tag the per-
 vasive concept of an alleged new “mode 2” of
 knowledge production suggested by M. Gibbons
 et al. (1994). Eventually, the mode 2 perspective
 on knowledge production and innovation is
 building on a long strand of studies into the rela-
 tion of science and technology (e.g., Zilsel 2003;
 Rip 1992) and, at least implicitly, alluding to
 older, more systemic concepts (e.g., List 1856).
 The evolutionary approach of Nelson and Winter
 (1977), the innovation system tradition as
 inspired by Freeman (1987) and developed fur-
 ther by many others (e.g., Lundvall 1992; Edquist
 1997; Hekkert et al. 2007), take on board an
 interactive, holistic understanding. Also studies
 into the social construction of technology (Bijker
 et al. 1987), “system transitions” in socio-
 technical landscapes, related regimes, “innova-
 tion journeys” and niche management (see e.g.,
 Geels and Schot 2007; Van de Ven et al. 1999),
 technology assessment and its “constructive”
 turn (Rip et al. 1995), understand science, tech-
 nological development, and innovation as a an
 interactive social continuum.
Second force: If the dynamics of science, tech-
 nological development, and innovation are

interwoven in practice, then “policy” and “governance” in a given innovation field will reflect this heterogeneity. Today, innovation policy is characterized by an “increasing ‘sophistication’ of policy instruments” (Boekholt 2010, 334). Concepts on innovation policy have evolved from a linear model to a more systemic and even “holistic” model of innovation policy (e.g., Smits and Kuhlmann 2004). Consequently, the scope and variety of involved organized actors (such as science organizations, industries, governmental agencies, parliaments, nongovernmental organizations) has become broad and heterogeneous. Actors have different interests, resources, and power, and they negotiate in various interlinked arenas on all kinds of rules and policy instruments. Political science studies have shown that the patterns of policy governance for science, technology, and innovation develop mostly in an incremental and only rarely radical way (Bozeman 2000; Larédo and Mustar 2001; Biegelbauer and Borrás 2003; Edler 2003). The organizations involved in policymaking and the arenas for the negotiation of options and decisions are mostly characterized by institutional inertia. They evolve to path dependence, interwoven with historical innovation regimes. One can analytically distinguish between two types of policy rationales in the context of science and innovation (EPOM 2007): “Knowledge production policy rationales,” on the one hand, are built on causal beliefs, often derived from Innovation Studies’ insights, about the production of knowledge, providing a theoretical framework for the type of policy proposed, especially with socioeconomic arguments. An advanced production rationale is characterized by the fact that knowledge is often tacit, partial, scattered and collectively distributed, and built through collective processes of creation, sharing, access, diffusion of knowledge, and more generally through learning processes. “Governance policy rationales,” on the other hand, reflect general causal beliefs in the political system about how the state should govern (EPOM 2007). An advanced governance policy rationale is offered by a “decentralized multi-space model, with a growing importance of

a large variety of public and scientific interest groups (public opinion, consumers, patients, NGO, etc.) willing to be associated into the policy design, with a high heterogeneity among them (in terms of level of knowledge, means of expression, financial resources, representativity, etc.)” (EPOM 2007). Following this rationale, the actual policy choice and mixes depend on negotiation and learning processes in the development of a given regime: Whether the future governance of nanotechnologies, for example, will be driven mainly by technoeconomic promises or by sociopolitical collective experimentation hinges not at least on the way how the involved heterogeneous actors in multi-space articulation processes will interpret the production rationales associated to nanotech.

Third aspect: Social science research, in particular Innovation Studies, can turn into “theory in action.” Given the variety and potential complexity of governance in the practice of innovation as well as in related policymaking, actors tend to develop assumptions or “folk theories” on governance, simplifying, guiding, and stabilizing their action: Innovators and policymakers develop rules of thumb based on experience, own analysis, or prejudice – or they refer to and utilize expertise based on Innovation Studies. Take, for example, the utilization of the “System of Innovation” approach: This analytical concept, a heuristic developed by economists and innovation researchers since the late 1980s, has been increasingly utilized by policymakers around the world. Innovation systems have been conceptualized as the “biotopes” of all those institutions which are engaged in scientific research and the accumulation and diffusion of knowledge, which educate and train the working population, develop technology, produce innovative products and processes, and distribute them; to this belong the relevant regulative bodies (standards, norms, laws), as well as the state investments in appropriate infrastructures. Innovation systems would extend over schools, universities, research institutions, industrial enterprises, the politico-administrative and intermediary authorities, as well as the formal and informal networks of the actors of these institutions (Kuhlmann 2001).

347 The innovation system concept turned out to
348 appeal to policymakers a lot, not at least because
349 the systemic perspective provided an argument
350 for a broadened scope and reach of public inno-
351 vation policy (Smits and Kuhlmann 2004). Many
352 used it as a sort of programmatic device: Since
353 a number of years, for example, the Swedish state
354 office for innovation policy calls itself “Govern-
355 mental Agency for Innovation Systems.” Actu-
356 ally, when taking a closer look, it turns out that
357 the very concept of innovation systems while
358 being designed by innovation researchers had at
359 the same time been inspired and strongly
360 supported by Scandinavian policymakers (see
361 Carlsson et al. 2010) and by the Organisation
362 for Economic Cooperation and Development
363 (OECD) (Lundvall 2007) – the concept became
364 “theory in action.” Scholars could have tried to
365 maintain academic distance to the lifting of their
366 concepts and findings by policymakers or practi-
367 tioners in innovation – but they chose to offer the
368 policymakers information, heuristics, analysis,
369 and theory, longing further than their “folk theo-
370 ries.” In other words, they danced with innova-
371 tion practice and policy and even jointly
372 composed new melodies.

373 Considering innovation practice, policy, and
374 theory as “partners on a dancing floor,” moving to
375 varying music and exposing different configura-
376 tions, one can interpret the “regimes” of innova-
377 tion and their evolution from the perspective of
378 learning. The ideas, rationales, and instruments –
379 finally the governance – of innovation and related
380 policy emerge as a result of interactive learning
381 between actors involved in innovation practice,
382 intervention strategies and policies, and Innova-
383 tion Studies and theory. Figure 1 (above)
384 represented an attempt to characterize the dance
385 of the three groups. Practice, policy, and theory
386 can be conceived as dancing partners in
387 a performance setting. The dancers observe each
388 other and react on the partners’ movements: They
389 copy, comment, complement, counteract,
390 neglect, learn, and thereby create and change
391 configurations. Sometimes innovation practice
392 is the driving force in a configuration, sometimes
393 theory, sometimes public, or private policy.

394 Learning on the innovation policy dance floor
395 may occur as first-order or as second-order
396 learning. According to Argyris and Schön
397 (1978), *first-order learning* links outcomes of
398 action to organizational strategies and assump-
399 tions which are modified so as to keep organiza-
400 tional performance within the range set by
401 accepted organizational norms. The norms them-
402 selves remain unchanged. *Second-order learning*
403 concerns inquiries which resolve incompatible
404 organizational norms by setting new priorities
405 and relevance of norms, or by restructuring the
406 norms themselves together with associated strat-
407 egies and assumptions, hence escaping tunnel
408 vision and crossing borders. In other words,
409 while first-order learning would help to improve
410 the expression, harmony or elegance of an other-
411 wise unchanged dance (or make an innovation
412 regime more effective), second-order learning
413 would help to change the melody and the dance
414 (or introduce new directions and modes of
415 governance).

416 **Third Consideration: The Potential of** 417 **Innovation Studies as a Dancing Partner**

418 Today, Innovation Studies are a respected aca-
419 demic field of interdisciplinary knowledge and
420 research, loosely interlinked with Science and
421 Technology Studies (STS; Hackett et al. 2007).
422 In short, most of the enormous scope of topics
423 covered by Innovation Studies and STS can be
424 subsumed within two very general rubrics (Silbey
425 2006, 538): First, the institutionalization, recep-
426 tion, and appropriation of science and innovation
427 and, second, the production of science and inno-
428 vation as a social process. The first perspective is
429 interested in the working of institutions, organi-
430 zations, policies (expectations, rules, regulation,
431 funding), strategy-making and planning, the
432 assessment of potential developments and
433 impacts of science and innovation, and their
434 constructive shaping (Constructive Technology
435 Assessment, CTA). The other, second
436 perspective of studies adopts an anthropological
437 view on the working of scientists, engineers, or
438 users trying to reveal the intrinsic organization,

439 culture, and epistemology of social groups. The
 440 ambition is to understand innovation not as
 441 a completely distinct realm of social action but
 442 like other social settings ruled by habits, rules,
 443 conflict, compromise, constructions, and narra-
 444 tives (Silbey 2006, 539). Consequently, this per-
 445 spective concentrated rather on innovation as
 446 social practice than on policy. This approach,
 447 nevertheless, has an important impact on policy
 448 concepts: It helps to understand that modeling the
 449 governance of “innovation in the making” would
 450 fall too short if practice were conceptualized
 451 mainly in terms of functional and normative req-
 452 uisites, suggesting rather mechanistic designs of
 453 public policy (“mode 1”). Applying the construc-
 454 tivist approach to technological development and
 455 innovation as fields of social practice, strategists
 456 and policymakers developed more and more
 457 sophisticated policy designs (“mode 2”). The
 458 above-sketched “production governance ratio-
 459 nale” can be understood as a result of this new
 460 perspective.

461 In short, one can state that Innovation Studies
 462 contributed a lot to a better understanding of the
 463 driving forces of each of the two other dancers,
 464 innovation in practice and policy, and became to
 465 some extent interwoven with them – sometimes
 466 very tightly, sometimes at some academic dis-
 467 tance. Innovation Studies cope with this tension
 468 and even make it a source of increased reflexivity
 469 and enlightenment for their own purposes. The
 470 reflexive potential of Innovation Studies arises
 471 from the combined perspective of the interaction
 472 of practice, policy, and theory: Observing the
 473 dance and getting involved into it, Innovation
 474 Studies hardly can avoid adopting
 475 a *constructivist* position and *reflecting* upon
 476 their own impact on the dance and the evolution
 477 of images and beliefs of the other partners. And –
 478 one step further – Innovation Studies cannot
 479 escape questioning the origins and dynamics of
 480 their own beliefs. To which extend are they
 481 driven by concerns of practice and policy?
 482 Could such a drift be pictured as second-order
 483 learning, or are Innovation Studies scholars’
 484 beliefs sometimes also echoing the trends or fash-
 485 ions of their dancing partners or of the surround-
 486 ing societal and cultural movement?

Obviously, Innovation Studies are not made 487
 up of one dominant theory; rather they appear as 488
 an assemblage of quite diverse intellectual 489
 strands, sometimes converging, sometimes 490
 diverting. Accordingly, innovation practice 491
 might prefer dances with other theory than public 492
 policy would like. In sum, there is no single 493
 recipe for coping with the ambiguity of being 494
 involved in the dance with practice and policy. 495
 Innovation Studies scholars moving with some 496
 passion on the dancing floor can only try to 497
 keep a precarious balance, based on some dis- 498
 tance through reflection. 499

**Fourth Consideration: Dance in Practice 500
 (Fora and Strategic Intelligence) 501**

For a number of reasons, the governance of inno- 502
 vation and related policy has become ever more 503
 complex: Innovation processes themselves are 504
 subject of multiple forces and have become 505
 more uncertain; the number and heterogeneity 506
 of actors involved has grown, hence also the 507
 plurality of interests and values; and the borders 508
 between public and private spheres have become 509
 blurred. In order to cope with these challenges, 510
 actors seek to base their policy initiatives on 511
 increased interactivity, and often also on more 512
 evidence of actual or potential conditions, cost, 513
 impacts, etc. Interaction may be formally institu- 514
 tionalized and regulated, while in early phases, 515
 interactivity may occur in emerging spaces and 516
 semi-institutionalized platforms, where 517
 policymakers, public researchers, and industry 518
 as well as experts meet, articulate their views, 519
 provide intelligence in order to inform the pro- 520
 cess, and make attempts to set the scene. One 521
 means of organizing a policy-oriented discourse 522
 in semi-institutional environments are “fora,” 523
 defined as *institutionalised spaces specifically* 524
designed for deliberation or other interaction 525
between heterogeneous actors with the purpose 526
 of informing and conditioning the form and direc- 527
 tion of strategic social choices in the governance 528
 of science and technology (see Figure 2, and 529
 Edler et al. 2006). 530

531 Fora can be seen as a dancing floor, a meeting
532 place for innovation practice, theory, and policy
533 with two related effects: (1) Interactive learning
534 of policy analysts, policymakers, and relevant
535 stakeholders and (2) improving the functioning
536 of science and innovation policy and strategy.
537 Fora can adopt several governance functions on
538 the dance floor: They can offer a general,
539 nondirected policy discourse, or offer policy
540 information on specific issues, or prepare policy
541 planning and development (visions, agenda,
542 implementation), or facilitate the resolution of
543 conflict and the building of consensus, or they
544 can improve the provision and application of
545 policy intelligence (e.g., see Edler et al. 2006).

546 In practice, there are manifold variations of
547 fora. A specific characteristic of the sort of
548 forum I am alluding to is the prominent role
549 played by “*strategic intelligence*” (SI). SI has
550 been defined as a set of sources of information
551 and explorative as well as analytical (theoretical,
552 heuristic, methodological) tools – often distrib-
553 uted across organizations and countries –
554 employed to produce useful insight in the actual
555 or potential costs and effects of public or private
556 policy and management. Strategic intelligence is
557 “injected” and “digested” in fora, with the poten-
558 tial of enlightening the debate (Kuhlmann et al.
559 1999).

560 SI can draw on semipublic intelligence ser-
561 vices (such as statistical agencies), on “folk”
562 intelligence provided by practitioners, and in par-
563 ticular on Innovation Studies. Meanwhile,
564 a number of formalized methodologies, based
565 on the arsenal of social and economic sciences,
566 have been introduced and developed which
567 attempt to analyze past behavior (“Evaluation”;
568 e.g., Shapira and Kuhlmann 2003), review tech-
569 nological options for the future (“Foresight”; e.g.,
570 Martin 1995), and assess the implications of
571 adopting particular options (“Technology
572 Assessment”; e.g., Rip et al. 1995). Also, other
573 intelligence tools such as comparative studies of
574 the national, regional, or sectoral “innovation
575 performance” were developed and used (e.g.,
576 the European “Community Innovation Surveys
577 (CIS)”).

578 Providers of SI play a number of roles in fora,
579 often in combination: as a facilitator or moderator
580 taking advantage of methodological capabilities,
581 as an enabler or teacher supporting critical anal-
582 ysis and self-reflection (bird’s eye view), as pro-
583 vider of issue expertise, or as entrepreneur using
584 fora for advancing SI application in
585 policymaking and for disseminating results
586 (Edler et al. 2006).

587 **Conclusion and Future Directions:** 588 **“Strategic Intelligence” and New** 589 **“Spaces” and New Models for** 590 **Innovation Initiatives**

591 Arenas of innovation policy have become more
592 complex and sometimes unclear during the last
593 two decades. Next to national governments,
594 semi-independent regional and transnational
595 institutions and agencies entered the arenas,
596 partly as cooperation partners and partly as com-
597 petitors. At the same time, public policymakers
598 are confronted with multinational companies
599 developing their innovation projects across the
600 globe, drawing on public policy support wherever
601 easily available, irrespective of the location of
602 exploitation of innovation returns. National inno-
603 vation policy will remain relevant, but actors will
604 be urged to change their perspectives and policy
605 designs: Hierarchical, fragmented, or stubborn
606 strategies will fail in this complex environment.

607 Furthermore, many late industrializing coun-
608 tries have started to develop own innovation pol-
609 icy approaches, many of them drawing on the
610 model of western industrialized countries. Yet,
611 there are also more radical views, arguing that
612 innovation policies are inspired on the wrong
613 models, aiming at solving the wrong policy prob-
614 lems, too narrowly defined, too poorly managed
615 and implemented, and/or lack the necessary sup-
616 portive conditions from society due to historical,
617 cultural, and political reasons (e.g., Rennkamp
618 2011). In particular, another concept of “inno-
619 vation” will be required, beyond the presently
620 prevailing business orientation, including aspects
621 of social novelty and development, new ideas
622 improving quality or quantity of life, not

623 necessarily linked with economic profits. “The
624 ultimate end of social innovation is to help create
625 better futures” (Pol and Ville 2009, 884).

626 Hence, it will be crucial to systematically
627 understand the diverging perspectives and inter-
628 ests of competing actors, to make them transpar-
629 ent and debatable – not aiming at weak
630 compromises but stimulating learning capacity.
631 This will require new interinstitutional and also
632 international “spaces,” fora where heterogeneous
633 actors from different arenas meet and interact.
634 “Strategic intelligence” can provide background
635 information and alternative scenarios of potential
636 future challenges for reflection. Otherwise, inno-
637 vation policymakers will be reminded of the
638 limits of an instrumentalist understanding and
639 see “how great expectations in Washington are
640 dashed in Oakland” (Pressman and Wildavsky
641 1973).

642 Cross-References

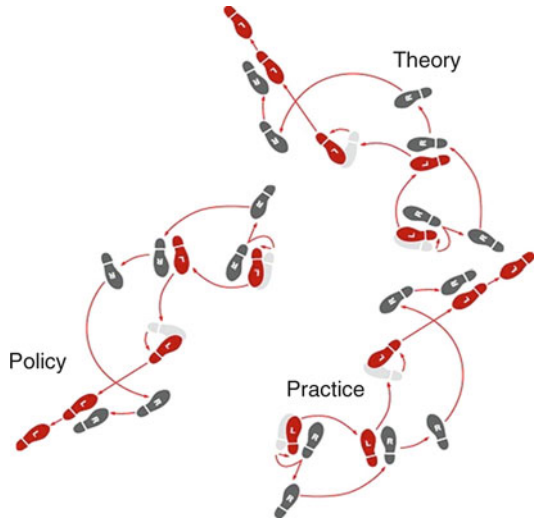
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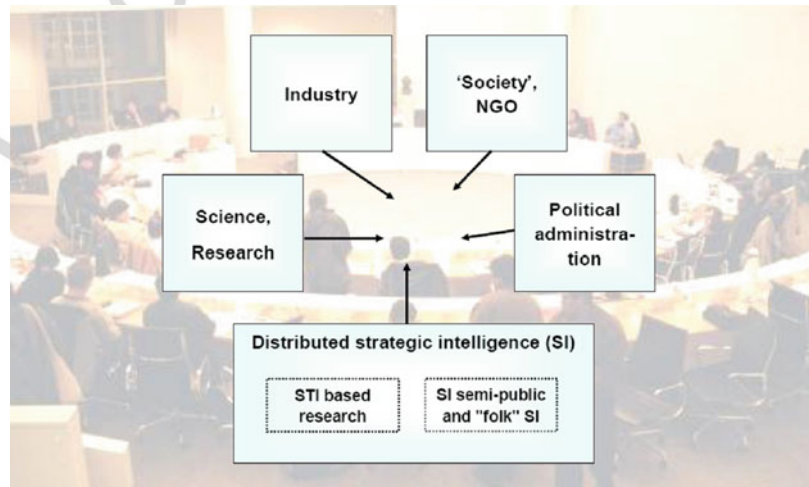
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Innovation Policies (vis-à-vis Practice and Theory), Figure 1 Innovation practice, theory, and policy as dancing partners (Source: Kuhlmann 2007, 5)



Innovation Policies (vis-à-vis Practice and Theory), Figure 2 Forum for debates of science, technology, and innovation issues (Source: Kuhlmann 2007, 17)