



Better understanding of innovation dynamics

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Topics: Drinking Water | Wastewater | Water & Development | Society

25 years ago, urine-diverting toilets were no more than an idea, challenging the central paradigm of wastewater treatment plants. Since then, however, modular water technologies have become increasingly important. Using a new method, scientists at Eawag have mapped the dynamics of this transition.

“For a long time, the collection of wastewater at treatment plants was the central paradigm for urban water management in Switzerland, even though the sewer system accounts for 80 per cent of the total costs, with only a fifth of the money actually being spent on treating wastewater,” says Bernhard Truffer, Head of Eawag’s Environmental Social Sciences department and Professor at the University of Utrecht. “The assumption that this is the best solution is increasingly being called into question.”

Visualising links among concepts

Of growing importance as a possible alternative are what are known as modular water technologies. In Switzerland, 25 years ago, an initial publication by Eawag researchers on urine-diverting toilets helped to launch a sector in which, today, important roles are played not only by a number of start-ups but also by international actors such as the Bill & Melinda Gates Foundation (BMGF). This shift has now been mapped by Jonas Heiberg, Christian Binz and Professor Bernhard Truffer on the basis of interviews with experts, using a new methodological framework developed by the research team: while “socio-technical configuration analysis” may sound as complicated as the graphs of interconnected circles at first glance appear, these networks essentially visualise which actors support similar concepts – and the ties that link them.

Mediating between opposing camps


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ructions of historical transition processes and in-depth case studies to ide
ntify and conceptualize socio-technical change. While such approaches have s
ubstantively improved our understanding of transitions, they often suffer fr
om methodological nationalism and a lack of generalizability beyond spatial
and sectoral boundaries. To address this gap, we propose a novel methodology
– socio-technical configuration analysis (STCA) – to map and measure so
cio-technical alignment processes across time and space. STCA provides a con
figurational and dynamic perspective on how social and technical elements ge
t aligned into "configurations that work", allowing for the identification o
f differentiated transition trajectories at and across spatial and sectoral
contexts. The methodology's value is illustrated with the empirical case of
an ongoing shift from centralized to more modular infrastructure configurati
ons in the global water sector. Building on this illustration, we outline po
tential contributions of STCA to configurational theorizing in transition st
udies, sketching the contours of what we believe could become a generative e
pistemological approach for this field.' (1255 chars) serialnumber =>
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Eawag Universität Utrecht, Niederlande Universität Lund, Schweden

Contact



Bernhard Truffer

Group leader, Group Cirus

Tel. +41 58 765 5670

bernhard.truffer@eawag.ch



Christian Binz

Group Leader, Group: Cirus

Tel. +41 58 765 5030

christian.binz@eawag.ch



Annette Ryser

Science editor

Tel. +41 58 765 6711

annette.ryser@eawag.ch

<https://www.eawag.ch/en/info/portal/news/news-archive/archive-detail/better-understanding-of-innovation-dynamics>