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Patrick Figge

Collective Knowledge

How Teams and Larger Social Systems Learn, Remember, and Invent

With a foreword by Prof. Dr. Carolin Häussler

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Foreword

Novelty is a critical feature of creative ideas, yet new ideas often build on existing knowledge which is increasingly dispersed among individuals. The sole inventor has become a rare phenomenon whereas collective knowledge production is becoming omnipresent. Collective knowledge refers to the sum of knowledge bits that specialized individuals possess. This type of knowledge can be powerful but requires adequate processes to coordinate and leverage the knowledge pool of specialized and differentiated communities and experts.

Yet, how collective knowledge and collective knowledge processing effectively work is far from being understood. The precise mechanisms behind turning collective knowledge into new and promising inventions as well as the factors and contexts, which are favorably for exploiting collective knowledge, need to be investigated. Research has only just started to address these issues.

In his dissertation, Patrick Figge makes a significant contribution. Based on a deep understanding of the field and thorough empirical work, he provides insights into how social systems learn, remember, and invent. His research proceeds in three steps. First, he investigates to what extent individuals with a unique combination of skills, experiences, or traits can have a critical impact on collective knowledge processing. In particular, his research focuses on how firm founders impact the ability of inventor teams to deviate from previous technological trajectories. Second, he theoretically and empirically examines if and to what extent social exchange rules as well as organizational design elements influence collective knowledge. Third, he elaborates on how digitalization changes the way social systems process knowledge, and in doing so, how digitalization challenges basic assumptions of the theory on transactive memory systems.

This book is Patrick Figge's doctoral thesis at the University of Passau, and it marks the starting point of a promising academic career. I am certain that the insights of his research will find the attention of researchers and practitioners alike.

Passau, March 2018

Prof. Dr. Carolin Haeussler

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Given that much of this dissertation falls into the area of team research, I am all the more aware of how important several ‘teams’ were in the endeavor to write this dissertation. I want to thank the teams (and friends) that challenged and supported me, while making my time writing this dissertation much more fun: the ‘Three-River Team’ (at the University of Passau), the ‘Gauchos’ (at the University of California, Santa Barbara), and the ‘Kralingse Team’ (at the Rotterdam School of Management, Erasmus University).

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Patrick Figge

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2SLS	Two-Stage Least Squares
CAGR	Compound Annual Growth Rate
CF	Control Function
ESN	Enterprise Social Networks
GMM	Generalized Method of Moments
IT	Information Technology
IV	Instrumental Variables
LIML	Limited Information Maximum Likelihood
MIPS	Million Instructions per Second
OLS	Ordinary Least Squares
R&D	Research and Development
S.D.	Standard Deviation
TMS	Transactive Memory Systems
TMT	Top Management Teams