<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An IOC’s Experience in Implementing Digital Oilfield Technologies</td>
<td>James M. Hacker, SPE, ExxonMobil Upstream Research Co.</td>
</tr>
<tr>
<td>12</td>
<td>Changing the Operation of Oil and Gas Fields From “Harvest” to “Process” Mode</td>
<td>Ron Cramer, Shell Global Solutions, and Joel Roger, Weatherford</td>
</tr>
<tr>
<td>26</td>
<td>The Fully Integrated Workflow: The Integration of Business Processes with People and Digital Technologies</td>
<td>Brian J. Crockett, Science Applications International Corporation</td>
</tr>
<tr>
<td>32</td>
<td>Employee Knowledge: Instantly Searchable</td>
<td>Joel Hoffman, Occidental of Elk Hills, Inc.</td>
</tr>
<tr>
<td>36</td>
<td>The Digital Asset: Connecting People, Technology, and Processes in a Collaborative Environment</td>
<td>Jeff Grable, SPE, Bill Sanstrom, SPE, and Glenda Wylie, SPE, Halliburton Energy Services</td>
</tr>
<tr>
<td>52</td>
<td>Experiences Using Lagosa to Improve Production Operations and Gas Marketing Performance</td>
<td>John D. Hudson, Shell Global Solutions (US), Inc.</td>
</tr>
<tr>
<td>60</td>
<td>Data Driven Surveillance and Optimization</td>
<td>Ron Cramer, K.-C. Goh, Mike Dolan, and Charlie Moncur, Shell Global Solutions Us Inc.</td>
</tr>
<tr>
<td>70</td>
<td>Viability Study of Implementing Smart/Intelligent Completion in Commingled Wells in an Australian Offshore Oil Field</td>
<td>M. Nadri Pari, SPE, Iran Petroleum University of Technology, and A.H. Kabir, SPE, Curtin University of Technology</td>
</tr>
<tr>
<td>79</td>
<td>Realizing Value from Real Time Well Monitoring In Greenfield Assets</td>
<td>David R. Feineman, BP America</td>
</tr>
<tr>
<td>87</td>
<td>4D: From Mainstream to Main Street</td>
<td>Stewart A. Levin, SPE, Halliburton Energy Services</td>
</tr>
<tr>
<td>91</td>
<td>Combining Value-Based Computer Functionality and an Organizational Change Approach to Deliver a Useful Solution to Users: The Case of Operating Procedures on Alaska’s North Slope</td>
<td>P. Floyd, RWD Technologies</td>
</tr>
<tr>
<td>101</td>
<td>The E&amp;P Balanced Scorecard: Becoming a Strategy Focused OPCO Driven by Performance</td>
<td>Sandeep Kadam and Christopher Fonseca, SPE, Tata Consultancy Services</td>
</tr>
<tr>
<td>114</td>
<td>The Promise and Challenges of Digital Oilfield Solutions—Lessons Learned From Global Implementations and Future Directions</td>
<td>Sathish Sankaran, Jose Lugo, Ankur Awasthi, and Gerardo Mijares, Halliburton</td>
</tr>
</tbody>
</table>
# Table of Contents continued

127  **Using Integrated Operations Centers**
*Kenneth Landgren, Jean-Pierre Lhote, and Jean-Claude Vernus, SPE, Schlumberger*

131  **What Lessons Can Digital Oilfield Practitioners Learn From Defence Initiatives Such as Network Enabled Capability?**
*Michael Popham, SPE, BAE Systems, and Tony Edwards, SPE, Stepchange Global*

140  **Exercises in Distributed Tactical Decision-Making in Advanced Collaborative Environments**
*P.S. Bayerl and K. Lauche, TU Delft; M. Crichton, People Factor Consultants Ltd.; and S. Sawaryn, SPE, and A. Deady, SPE, BP*

150  **Real-Time Evaluation of Pressure Transients: Advances in Reservoir Monitoring**
*C. Contreras, SPE, S. Bodwadkar, SPE, and A. Kosmala, SPE, Schlumberger*

161  **Creating a New Workflow for Integration of Business Processes Between Well Engineering and Subsurface Data Management**
*J. Eade, Halliburton*

170  **Effective Use of LEO Satellites for Well Data Collection**
*Robert McCoy, Baker Hughes Centrilift*

178  **Automated, “By Exception” Well Surveillance: A Key to Maximizing Oil Production**
*Peter Schipperijn, SPE, Chevron Energy Technology Company; Raymond Thavarajah, SPE, and Ana Simonato, SPE, Chevron North America Exploration and Production Company; and Mohsen Mehdizadeh, SPE, Science Application International Corporation (SAIC)*

183  **Anomaly-Driven Engineering Empowered by a Central Surveillance Center**
*J.M. Brutz, SPE, Shell Exploration and Production Company*

190  **Getting Data to Drilling and Completions Teams and Vice Versa**
*S.J. Sawaryn, A. Deady, N. Whiteley, and C. Critchley, BP Exploration; L. Brown, EDS; and N. Gibson, Kongsberg Intellifield*

203  **E&P Operational Innovation With Real-Time Collaboration and Exception Management**

213  **A Systematic Approach to Well Integrity Management**
*Alex Annandale, Marathon Oil UK, and Richard Conway and Simon Copping, Expro*

220  **A Systematic Approach to Real-Time Production Optimization**
*Sebastiano Barbarino, SPE, and José Alvarez, SPE, Merrick Systems, Inc.; and Miguel Angel Lozada, SPE, and Felipe Diaz, SPE, Pemex*
Table of Contents continued

232  
WITSML Real-Time Inter-operability Testing  
J.G. Pickering, SPE, and N. Whiteley, BP; J. Rochford, SAIC; and K. Sheil and J. Lowe, PA Consulting

242  
Strategic Decision Making in the Digital Oil Field  
B. Jafarizadeh, SPE, and R.B. Bratvold, SPE, University of Stavanger

247  
Subsurface Support Centre: A Hub for Communication of Knowledge  
S. Løwén, B.E. Nygård, S. Østensen, and T. Lund, StatoilHydro

255  
Drilling Operations Centers: A History of Functionality and Organizational Purpose—The First Generation  
J. E. Booth, SPE, Booth Consulting

262  
Integrated Business Processes in Production Operations  
Stéphane Lauzon and Gene Broadway, SAP

268  
A Successful Approach in Integrating People, Process, and Technology Inside Collaborative Environments: A Practical View of Challenges and Lessons Learned  
D. Derenzi, Accenture; P.S. de Sousa, S.A. de Oliveira, and M.A.N. Herdeiro, Petrobras; and J.R. Albernaz and A. Valadares, Accenture

278  
Integration Is About People  
Rufina Lameda, SAIC, and Frans van den Berg, SPE, Shell

283  
Cost Optimization Programs in Software Asset Management  
Signe Marie Stenseth, Vice President, OpeniT, Inc.

288  
Strategies for Training Digital Petroleum Engineers  
Iraj Ershaghi, SPE, University of Southern California; Donald Paul, SPE, University of Southern California and Energy and Technology Strategies, LLC and Mehrzad Mahdavi, SPE, Schlumberger