

Preface

Carlota Perez has made several highly original contributions to the understanding of long-term technological transformations and the way in which such changes interact with wider economic, social and political changes. This book is perhaps her most original and controversial contribution. Her intense interest in these deep processes was aroused in the 1970s when, as a young researcher, she was studying the oil industry, then and still today of critical importance for her own native country, Venezuela. In trying to explain the causes and consequences of the so-called OPEC crisis of 1973, she became convinced that the global economy had begun a long-term transition from a mass-production economy based on cheap oil to an ‘information economy’ based on cheap micro-electronics. The arrival of the microprocessor – a ‘computer on a chip’ – served as a ‘big-bang’ announcing this probability and she was able to develop her theory at this time through a period of postgraduate research in California – a state which was already then at the forefront of the Information Revolution.

As a result of this research and her subsequent work with government and industry, she was able to publish in 1983 a paper that became an influential landmark in this field. It was entitled ‘Structural Change and the Assimilation of New Technologies in the Economic and Social System’ and the title adequately reflects the content. It became influential for three main reasons. First of all, it demonstrated that very big changes in technology entailed not just the extraordinarily rapid growth of a few new industries, but also, over a more prolonged period, the rejuvenation of many ‘old’ industries, which found ways to use the new technology and to make changes in their organization and management, influenced by the new industries. She designated this combination of new ways of thinking about the productive system, including its organization, its techniques and its interdependencies as a change of ‘techno-economic paradigm’. This concept of a paradigm change, with each major technological revolution, has become very widely accepted, particularly since Alan Greenspan began to use the expression in the 1990s to explain the upsurge in the American economy at that time.

The second major contribution which Carlota Perez made in that paper was to point out that such a ‘meta-paradigm’ change, affecting the entire economy entailed the very widespread use of new inputs. In each technological revolution, whether in earlier times with iron, coal, steel, or oil or with chips today, it