

題目	歐盟數位產品護照如何影響電池產業的 未來態度與挑戰－以 GS1 數位產品護照架構為例
作者	葉婕妤(中原大學企業管理學系碩士研究生) 彭永新(財團法人中華民國商品條碼策進研發處處長.)
摘要	數位產品護照（Digital Product Passport, DPP）是一種紀錄產品整個生命週期中各階段詳細的數據和資訊的文件，內容包括預計使用壽命、回收機制、環境足跡、材料成分等，從而實現對產品生命週期的透明化管理和循環經濟的發展，電池產業作為首波推行之對象，其資訊透明化需求相較於其他產業來說更為迫切，GS1 作為全球標準化組織，針對歐盟此一政策提出數位產品護照之建議架構與原則，為其提供相應的技術支持，而本研究希望藉由探討在 GS1 所提供的全球標準下，了解電池產業是否可以在遵循歐盟數位產品護照要求的同時，實現數據的互通性和全球供應鏈透明化，並分析企業在應對此政策時所面臨到的挑戰與機遇，以提出相應的解決方案幫助企業更好地滿足法規需求，研究結果顯示，GS1 所提出的建議架構與原則不僅能有效減少數據管理的成本，也能提高供應鏈的合作效率，進而推動電池產業達成循環經濟的目標。
關鍵字	數位產品護照、電池護照、循環經濟、GS1
Title	The Impact of the EU Digital Product Passport on the Future Perspectives and Challenges of the Battery Industry: A Case Study of the GS1 Digital Product Passport Framework
Author	Chieh-Yu Yeh(MS student, Department of Business Administration, Chung Yuan Christian University) James Perng(Director of R&D, Foundation for the Promotion of Bar Code Technology, R.O.C)
Abstract	<p>The Digital Product Passport (DPP) is a documentation system that records detailed data and information across all stages of a product' s life cycle, including expected lifespan, recycling mechanisms, environmental footprint, material composition, and more. Its purpose is to enable transparent life-cycle management and support the development of a circular economy. As the first industry required to implement DPP, the battery sector faces an especially urgent need for enhanced information transparency compared with other industries. GS1, as a global standardization organization, has proposed recommended architectures and principles for digital product passports in response to the European Union' s policy, providing the necessary technical support.</p> <p>This study aims to explore whether the battery industry can achieve data interoperability and global supply-chain transparency under the GS1 global standards while complying with the EU' s DPP requirements. It also examines the challenges and opportunities that companies encounter when responding to this policy, and proposes corresponding solutions to help enterprises better meet regulatory demands. The research findings indicate that the architectures and principles proposed by GS1 not only reduce data-management costs but also improve supply-chain collaboration efficiency, thereby supporting the battery industry in achieving its circular-economy goals.</p>
Keyword	Digital Product Passport, Battery Passport, Circular Economy, GS1