



Market Analysis Report

「Optical Disc Archive 2014」

Fujiwara-Rothchild, Ltd.

Fujiwara-Rothchild, Ltd. will publish the "Optical Disc Archive 2014" on June, 2014.
This is the 3rd report of optical disc archive related reports.

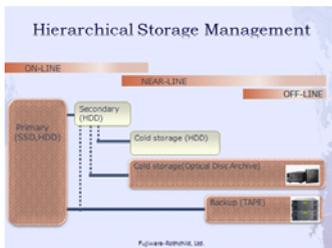
CONTENTS

- 1 Brief Summary
- 2 Index
- 3 Abstract
- 4 Examples

1 Brief summary

An optical storage is facing the new stage. In addition to the off-line archive storage, the cold storage in a huge data center, which stores data whose access frequency decreased, will begin. Cold storage is defined as the archive storage in a broad sense. In the present, the Philosophy and Significance of the optical storage reached the stage to be widely recognized in the world.

Facebook's adoption of optical storage to the huge data center has the big impact for the expansion of optical storages in future. In future 5 years, the market expansion of optical disc cold storage in a data center will change the market and the optical disc industry significantly.



2 Index

1. Executive Summary
2. Expansion scenario of optical archive storage
3. Roadmap of new generation archive disc and technology
4. Market approach of optical storage related companies
5. Analysis of the Facebook optical storage prototype
6. Facebook related business forecast
7. Facebook impact and its influence to the market
8. Forecast of the optical disc cold storage

80 pages

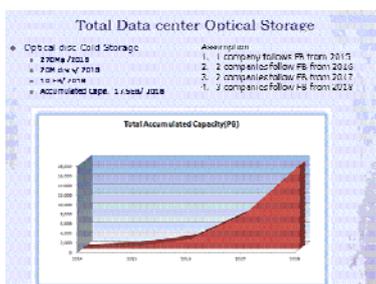
3 Abstract

The achievement of the roadmap of the large-capacity disc is extremely important to be able to endure severe competition with HDD or LTO for Cold Storage.

The influence of the "Facebook Impact" will cause explosive change not only for the market but also the optical storage industry.

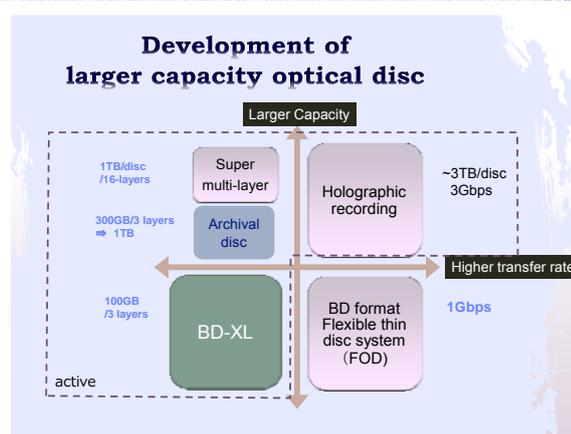
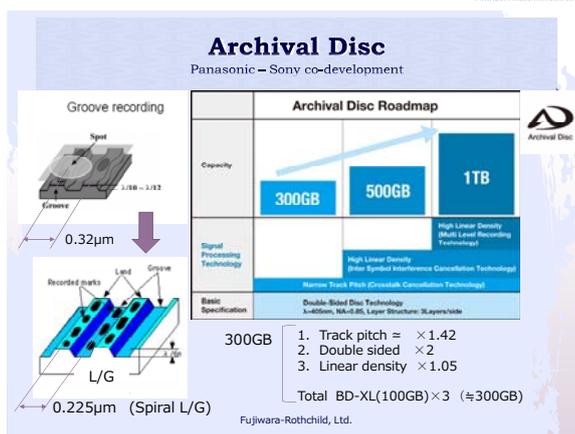
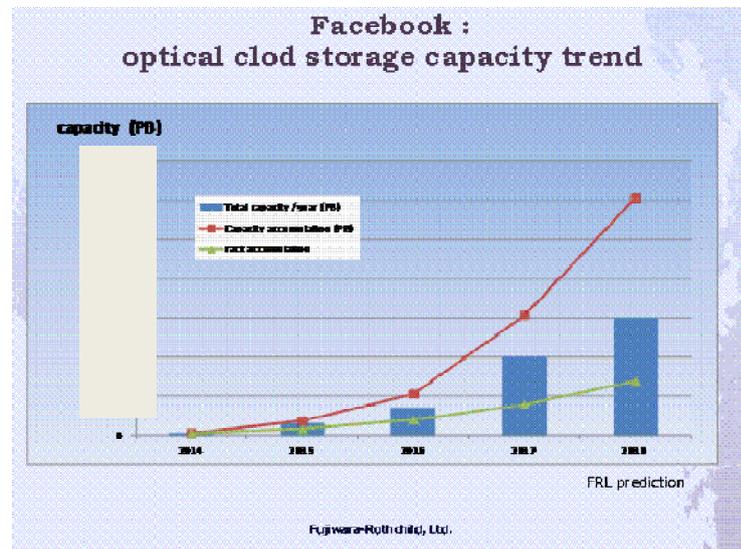
In future five years, both cold storage of the data center and the optical storage industry will accomplish a significant change.

1. 80% of generated data decrease access frequency in a short term. To achieve a perfect balance between storing such huge data and keeping sustainable environment, not to presuppose using high energy consumption and short life storages but to use low energy consumption and long life storages should be inevitable.
2. Three types of optical storage are in practical use. 1) Near-line storage (long term storage in a library system), 2) Off-line storage (long term storage in off-line), 3) Intermediate style.
3. The big difference between the usage as cold storage in data center for cold data storage and off-line storage for compliance and regulation data storage are inexpensiveness and large capacity. Initial cost is the one of the most important issues for cold storage in data center.
4. The main role of the road map of the large capacity optical disc is providing the path to the 1/10 bit cost. There are 2 kinds of BD base road map.
5. The storage capacity of a magazine (includes 12 discs) reaches 3.6TB in 2015 and the bit cost of the optical disc will reach \$0.01/GB in the next several years.
6. The optical disc library system proposed by Facebook, storing 10,000 discs in the 19" rack library, has 1PB storage capacity. Facebook said the energy fee decreases by 80% and cost decreases by 50%.
7. Facebook is planning the aggressive installation of optical library systems. ●●PB in 2014 is the present goal. Total accumulative capacity of the optical cold storage system in data centers including several data centers (Facebook and others) will reach 17EB.



4 Examples

The Facebook-related business expands with the capacity increasing of the disc. It will expand to ●EB scale in 2018.



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