

# Executive Summary



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## C.L.E.A.R electronic stationery

A low cost, eco-friendly and paper-thin e-paper alternative. I propose **Compact Layered Electro-Active Renders**, a new flexible display to fill the need of the global analogue to digital conversion revolution.

In a world where mobile computing and print media rule the field of communication, it's interesting to find that many people feel the need for something else. This product should alleviate the cost and size issues of mobile computing, and the inherent limits of hard copy. It should be an intermediate media that relies on the pro's of both mediums as a route to fill the need. C.L.E.A.R electronic stationery is a viable, low-cost solution to this end.

**Tactility and price of hard copy:** A thin and low-cost (at EoS priced similar to few sheets of printed graphic paper) folio, scalable and flexible, displaying text and basic graphics in a static ink-like manner. Having an on/of state, and able to display an uploadable library of pages in quality comparable to printed paper. Read it, write on it, recycle it.

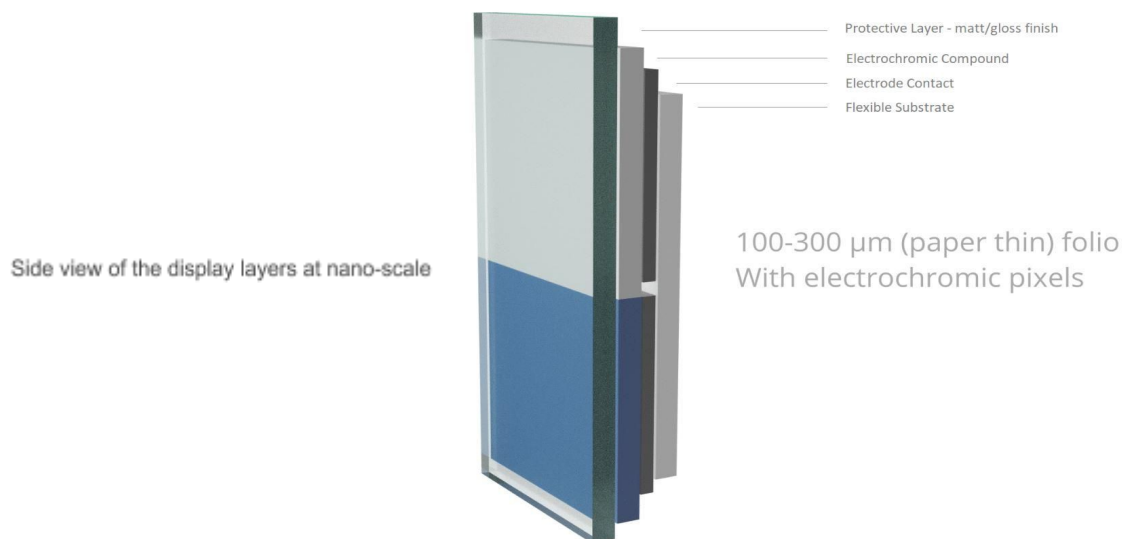


**Versatility and security of digital:** Using a variety of upload options, as well as means of internal data storage, multiple pages can be uploaded or hard-coded with low or high security features, and can be read in sequence on C.L.E.A.R.

**Need:** In the current world of ICT, business, and personal administration there are two primary methods for data storage and communication. These are in the form of hard copy, or print media, and digital storage, locally or on the cloud. The current slow rate of analog to digital conversion (a gap the tablet computer hoped to fill) provides a use case that the market and technology has not yet fully satisfied. I propose this intermediate stage between print and digital, due to the inherent wastage of print media, evident security and privacy issues, and inferior interfacing between the two primary data storage and communication mediums. There is clear room for further exploitation of analog to digital conversion market.

**Product technology:** By combining several existing technologies it is possible to use a brand new way to create e-paper. Using organic electrochromic ink, deposited on biodegradable PET (clear plastic) substrate, display pixels can be easily created with modern material deposition printers. Electrochromic materials, carbon nano tubing, printable electronics, and plastic based transistors, or memristors (for hardware encryption), are some of the technologies presented as part of the C.L.E.A.R concept. For technical details see the business plan.

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**Summary of the business:** It is important to mention that myself being the business development lead, and having pushed the system architecture as far as I can with my current technical skillset, I am now focussing on go-to-market strategies and system integration. That said, I am seeking a technology expert with which to partner to help integrate the technology and achieve my business goals. As such this business concepts viability depends on such a person, and all funding I need will depend on my ability to recruit the RIGHT cofounder, an so doing enter this business with the right team to drive this concept to market.

The business is intended to scale from R&D and niche startup to mass producer and solutions provider. The phase one will focus on sampling, creating emerging technology hype, developing new solutions for existing problems, hardware development and manufacturing for early adopters, trade and technology expos, online campaigns and market testing.

**Business opportunity and strategy:** Unlike the products of the major competitors/competition, C.L.E.A.R. is not a niche product. reamLAB is uniquely aiming for a hardware product range of comparable cost and robustness to a few sheets of traditional printed paper and aims to capture significant market share of print/digital, as well as cultivating a new market for popular e-paper. This will be supplemented by a diverse solutions business that provides post sales service, licensed content and enterprise and government secure stationery solutions.

**Market analysis:** A wide range of applications in professional 3D printing, printed electronics, biomedical and more are driving market growth, in a collective industry quantified by Smithers Pira as being worth \$67.4 billion in '15, up from \$32.1 billion in '10. It will grow to \$107.9 billion by '20.

To illustrate a use case: Electronic Shelving Labels, one application for the reamLAB product, the market size was over USD 450 million in 2017 growing at a CAGR of 13% from 2018 - 2024. The global shipments are expected to surpass 240 million units by 2024.

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If reamLAB can capture even 1% of the market in 2022 it would mean a gross income of approximately \$10mil with the ESL revenue stream alone.

Initial profit model (phase 1-2) will be high cost, high return, niche products. This will later transition to low cost, high volume products (phase 2-3) and when reamLAB solutions (phase 3-4) is introduced, it will diversify to offer software, niche hardware, and low cost mass-produced hardware revenue streams.

**Customer:** The initial target market is broken into (phase 1-2) early adopters, b2b (business to business) and governments/industry partners. The marketing to these segments will be very different from the consumer/solutions markets later on (phase 3-4), which will focus on mass production and aforementioned enterprise solutions.

**Competition:** There is a diverse spread of players in the growing market for flexible displays. Larger companies such as Samsung and LG in South Korea focus on AMOLED displays. Smaller companies such as Plastic Logic in the UK and Rdot in Sweden, focus on e-paper and e-paper alternatives. CLEARink in the US focuses on full colour, high fidelity device electrophoretic displays (older, dated e-paper technology). These companies already compete in trying to bring the cost of production down, and to increase resolution and colour options.

Economically competitive electrochromic displays, on the other hand, are now being developed and used for labeling, IOT and wearable displays. Display grids (for functional replacement of traditional paper) have been developed, but not brought to market. Rdot is a new startup (2017-2018), marketing their ECD's for these purposes and is notable for their similar technological and business trajectory to what reamLAB is pursuing.

**Management team:** Current ownership of reamLAB and C.L.E.A.R brand IP is held solely by Rean Combrinck. Technology research, market research, and forecasts fall within the scope of work done by reamLAB thus far. He is an aspiring entrepreneur with experience in the marketing and audio-visual production industries.

**Financial summary:** Initial funding requirement for development of the physical products, and market testing of a Minimal Viable Product (MVP) business is \$800,000.00 USD once off, of which \$280,000.00 will be used to set up business, and the rest will cover business capital needs for the 5 year ROI period (primary financials in the business plan focus on this). Key industry partnerships with multinationals, and later rounds of investment (\$10mil-\$20mil in rounds A-B) will be pursued in the case of success of the MVP, and will mean growth capacity beyond this plan's forecasts. Seed investor exit opportunities will appear as soon as the concept is proven (1-2 years) and multinationals/post-seed VCs become interested. Investors will receive equity equivalent to their contribution.