The Crowd in the Cloud:
Exploring the Future of Outsourcing

White Paper

January 2013

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INTRODUCTION

> With the increased proliferation of Cloud based technologies, we will continue to see the democratization of labor into the cloud. Future enterprise models for service delivery will be built on hybrid strategies that harness both Private and Public "Crowds in the Cloud".
>
> *– massolution.com*

Only a few years ago, the majority of enterprise executives argued that Cloud, at least for large companies like banks and other companies with stringent requirements around data, privacy and security, would never become a scalable technology. They predicted that vast numbers of enterprise-grade solutions would remain a myth. Today seventy-percent of enterprises have incorporated Cloud computing technologies into their technology portfolios.

Lionbridge Technologies has sponsored this white paper through its enterprise crowdsourcing division, TheSmartCrowd.com, in collaboration with massolution, a research and advisory firm, specializing in the design and implementation of enterprise crowdsourcing and crowdfunding models. We hope you will join us for the conversation at www.TheSmartCrowd.com and at www.crowdsourcing.org about how leading enterprises are embracing the next paradigm shift in the distribution of work by outsourcing to the crowd in the cloud.

THE NEW SOURCING PARADIGM: ENTERPRISE CROWDSOURCING

World-class companies achieve leadership status by continually challenging their industry paradigm and reinventing their market approach. That can also involve making fundamental changes to the way they deliver products and services. This white paper describes an important new competitive strategy: enterprise crowdsourcing.

Over the last few decades, enterprises have become proficient in outsourcing work to best-in-class providers onshore or offshore. Industry, as a whole, has already banked the benefits of solutions that consolidate infrastructure, improve processes and lower the cost of labor. In that sense, outsourcing and offshoring are no longer regarded as models that deliver competitive advantage. Rather they have become table-stakes for competing in the global arena.

With the number of people online approaching 3 billion by 2016 and projected to reach 5 billion by 2020, a new workforce has emerged that leading enterprises are now harnessing. Available on-demand, this workforce has abundant capacity and the expertise and knowledge to perform work from simple to complex, and solve problems and grand challenges. This innovative model, distinct from traditional outsourcing, presents a new opportunity to create a more competitive market position.

FIGURE 1. CROWDSOURCING INDUSTRY REVENUE GROWTH
Millions of $US, based on a sample of 15 leading crowdsourcing service providers (CSPs)

Growth in the global enterprise crowdsourcing market is already accelerating. In 2011 the growth rate was 75%, exceeding 2010's market growth of 53%. In 2012 we anticipate a doubling of the market by year-end. The number of people engaging in crowd-labor increased by 100% in 2011 and will increase again by a similar margin in 2012.
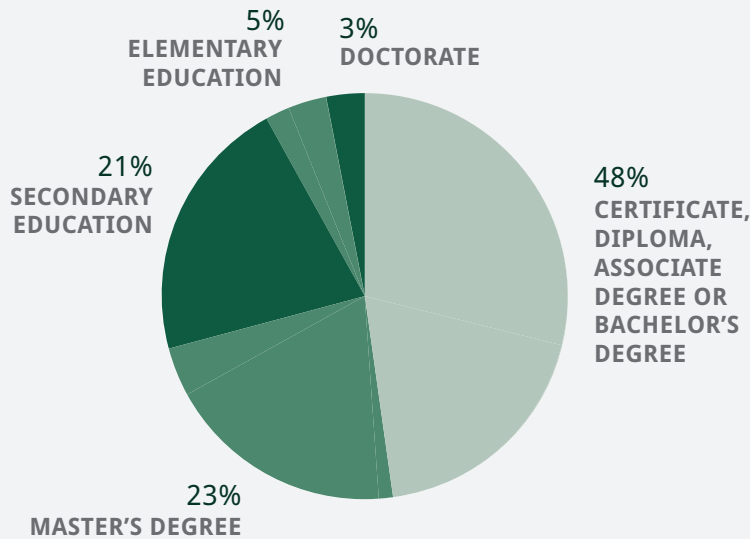

375.70

74.7%

214.90

52.5%

140.80

2009   2010   2011
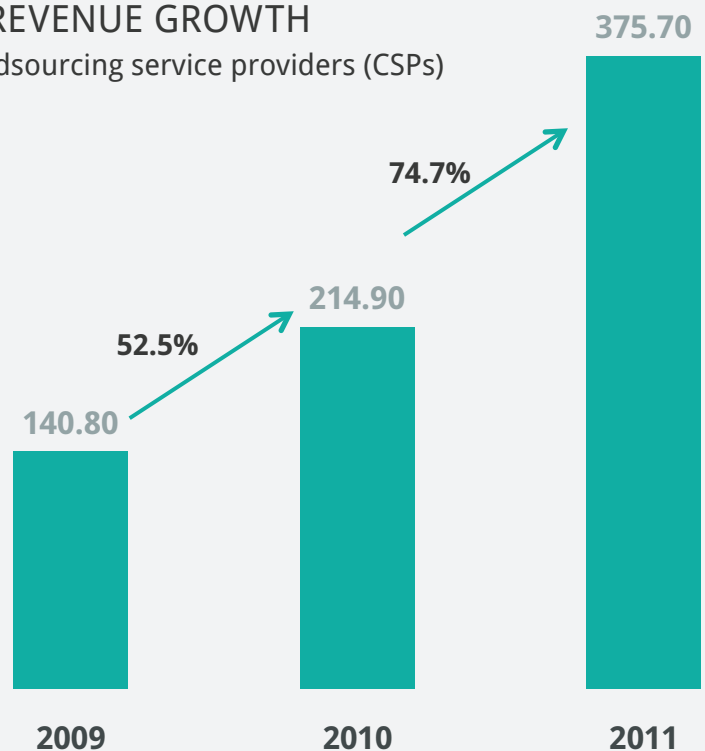
Source: Crowdsourcing.org, 2011

FIGURE 2. WORKER TRENDS AND COMPOSITION

Percentage, 100%=6.3M workers

Workers breakdown by education level

5%
ELEMENTARY EDUCATION

3%
DOCTORATE

21%
SECONDARY EDUCATION

48%
CERTIFICATE, DIPLOMA, ASSOCIATE DEGREE OR BACHELOR'S DEGREE

23%
MASTER'S DEGREE

Workers breakdown by geography

6%
SOUTH AMERICA

41%
NORTH AMERICA

18%
EUROPE

35%
ASIA PACIFIC

Source: Crowdsourcing.org, 2011

Enterprise crowdsourcing is a way to harness the 'crowd' to deliver cheaper, faster and better work. Unlike general forms of crowdsourcing, which include mass-consumer-based models (e.g. hiring an Adobe Photoshop expert for an hour to touch up a family portrait), enterprise crowdsourcing is about the application of crowdsourcing at scale with fast throughput (often extraordinarily high throughput) by using an innovative new delivery model that is disrupting the way traditional work gets done. Enterprise crowdsourcing introduces the power of the crowd into routine business processes, to save money, drive new business, or provide breakthrough performance.

Enterprise crowdsourcing has been in the making for the last decade as technology has advanced to the point where network connections have become ubiquitous, fast and reliable. This has enabled companies like Amazon, at one end of the crowd-labor pool, to recruit workers from their existing customer base of half a million people and other companies to tap into and organize, for example, the billion plus people that frequent social media sites that are also able to use their time to perform work and produce things. Other companies such as Lionbridge have recruited and organized hundreds of thousands of experienced online workers who can perform more complex tasks.

Growth in the global enterprise crowdsourcing market is already accelerating. In 2011 the growth rate was

75%, exceeding 2010's market growth of 53%[1]. In 2012 we anticipate a doubling of the market by year-end. The number of people engaging in crowd-labor increased by 100% in 2011 and will increase again by a similar margin in 2012.

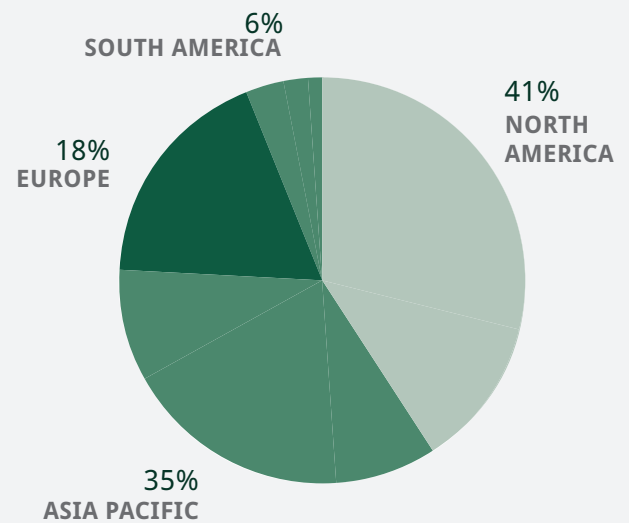Enterprise crowdsourcing allows clients to draw on this online labor pool and the cognitive surplus it represents. In short, enterprise crowdsourcing is an innovative approach to the labor ecosystem – a way to attract, focus and utilize labor, skills and intelligence in a new way. It is a process to drive new value to the enterprise.

In this white paper we will look at the growth of enterprise crowdsourcing and the benefits it is bringing to companies leveraging this new model.
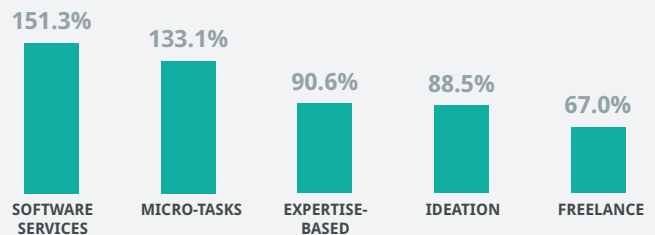
FIGURE 3. GROWING NUMBERS OF CROWDSOURCING WORKERS

Total number of crowdsourcing workers
Number of workers, based on a sample of 26 CSPs
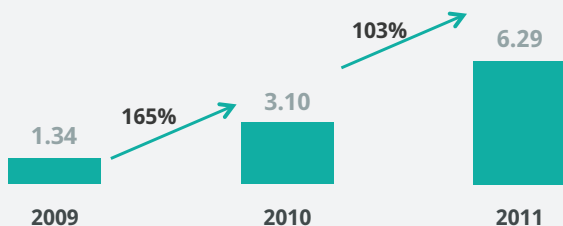
Growth in the number of crowdsourcing workers by crowdsourcing category
Number of workers, based on a sample of 15 CSPs

Source: Crowdsourcing.org, 2011

The Emergence of Enterprise Crowdsourcing
There are now over 65 different categories of crowdsourced tasks deployed by enterprises[2] and many Use Case examples within each category. Examples include crowdsourced research, business analytics, content generation, data management and translation, to name a few. The number of categories and Use Cases are growing steadily, evidence that companies are rapidly expanding the types of tasks that they want to fulfill through the crowd. Those tasks cover a wide variety of knowledge tasks, expertise tasks, routine tasks and creative tasks that we touch on below.

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1   Massolution Crowdsourcing Industry Report 2012
2   http://www.crowdsourcing.org/document/enterprise-crowdsourcing-use-cases-analysis/12361

Getting enterprise crowdsourcing right requires new processes, the ability to identify and call upon potentially vast numbers of people, and the ability to integrate these seamlessly into an enterprise workflow. This requires a new brand of human resource management. Workers that are independent and widely distributed need motivation and affiliation. These tasks fall to companies like Lionbridge.

Why Now?
Enterprise crowdsourcing is made possible by a number of factors that include new Cloud-based, platform technology and the growth of the Software-as-a-Service business model, global micropayment[3] systems, and new software systems that control work-flows and work quality and that distribute the work to large groups of workers within the global talent pool.

Cloud
Seven out of ten companies are now using Cloud computing, with over 80% of new enterprise apps being deployed on cloud platforms[4]. Mainstream adoption of Cloud-based solutions is driving enterprises to further standardize internal processes. Increased standardization is enabling enterprises to move further away from captive-based labor models and move more work into the crowd and in the cloud, where they can benefit from a combination of global labor rates, more specialized skills and more specialized task management processes, at scale.

There are many drivers of cloud adoption but a significant one is the migration to tablet and smartphone computing. That trend is driving enterprise computing beyond the firewall. From a task performance viewpoint, cloud computing provides the infrastructure for work to be performed anytime, anywhere, within a fully secured, yet mobile or distributed environment.

Software-as-a-service
Software-as-a-service is an integral part of cloud adoption, but it is driven also by the corporate search for the best balance of core versus context. In separate research we have found companies with as few as 300 employees using up to 18 enterprise apps in the cloud for service lines like HR software. The need for agility is driving companies to migrate contextual services (services needed to run the business that they don't have to own) to the Cloud, while focusing internal resources on developing core differentiators (elements of the business such as strategy and client management that they need to retain). This is continuing to drive mindset changes that outsourcing and crowdsourcing are standard strategies for distributing work outside the enterprise.

The growth of micro-payments
The international transfer of small amounts of money has been historically difficult due to high transaction costs. The development of micropayment systems began in the late 1990s, but it was only in the last 10 years that companies such as PayPal have made it feasible to pay small amounts of money to workers for performing a range of small tasks. Although the growth of micro-payments was driven by the need for media companies to monetize online content, micro-payments have been adapted to cloud labor where some payments will be as low as $20 or less.

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3   http://en.wikipedia.org/wiki/Micropayment
4   http://www.cloudproviderusa.com/5-cloud-computing-statistics-infograph/

The global talent pool

The online population is growing quickly, in part because of the growth of the smartphone and tablet form factor. It is expected that the global, online, labor force will exceed 3 billion people by 2016, but more importantly the number of people available to participate in specialized crowd-based tasks is increasing. Active participation in cloud labor grew by 100% in 2011.

Enterprise Crowdsourcing vs. Offshoring and Outsourcing

As early as 2009, a Cap Gemini report showed that 74% of executives think outsourcing helps a company survive in today's economy, 70% say that money saved by outsourcing can help a company grow, and 60% believe outsourcing makes a company more agile and flexible. Despite these positive endorsements, outsourcing and offshoring have had limited success in practice because, by and large, service agreements have retained a per-hour or per-person (full time equivalent) pricing model, and the potential flexibility has been compromised by the all-inclusive service agreement itself.

The promise of crowdsourcing is true output-based pricing. In other words, clients pay for what they get rather than for a staffing quota or the time that goes into a solution. Enterprise crowdsourcing systems allow enterprises to buy labor on a per-task basis, fundamentally changing the cost-basis of outsourced work. In place of full time equivalents (FTEs), compa-nies are now able to pay only when tasks are actually completed to a satisfactory level of performance – a paradigm shift to 100% output-based pricing rather than input-based.

FIGURE 4. PRICING MODELS

8%
PERFORMANCE-BASED

16%
PRICE PER
WORKER'S TIME

76%
TRANSACTION-
BASED
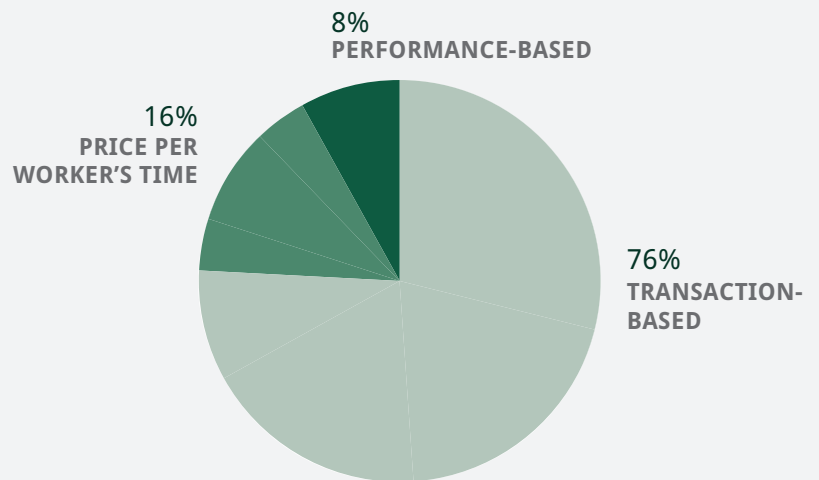
Source: Crowdsourcing.org, 2011

Price per transaction is a prevailing pricing method in the crowdsourcing industry. In particular Micro-task and Knowledge-Task CSPs charge over 95% of their services based on transaction-based pricing model. Price per worker's time is a popular model for freelance sites and software services. Expertise-based providers show a greater diversity of pricing models, including the least prevalent model of performance-based pricing.

That makes enterprise crowdsourcing a perfect implementation of the new Cloud-based computing era. Enterprises are able to ramp up services when they need tasks to be completed and to ramp back down to zero when things go quiet, with true variability compared to traditional outsourcing.

ENTERPRISE CROWDSOURCING SUCCESS STORIES

It is tempting to think of crowdsourcing in two ways: At one end of the spectrum, it helps create new ideas for innovation – the so called ideation process that we've seen used successfully by companies like Dell (ideastorm) and Starbucks (mystarbucksidea). At the other end it can help companies save money by outsourcing microtasks. This is the Mechanical Turk version of crowdsourcing.

There is a very large mid-ground where skilled tasks are better performed, often at lower cost, by skilful use of the crowd. This middle ground requires some careful thought around task design. Executed properly, it can create a number of benefits. These tend to relate to:

- productivity
- flexibility and scalability
- cost savings
- predictable costs
- and better time to market.

What's more, those improvements can be carefully designed into a company's existing workflow. Let's look at a few examples.

EXAMPLE 1. SUPPORTING BETTER REGULATORY COMPLIANCE THROUGH A CAPTIVE CROWD
A Lionbridge client, a well-known global software company supplies ERP software to its global client base. This software is designed to allow users to comply with local accounting regulations, and has to be up-to-date and accurate. Imagine an ERP system that gives wrong or outdated guidance on tax compliance, for example. In addition the software provider has to provide the information for its own compliance needs.

The traditional way of dealing with this problem, which involves multi-country, multi-lingual regulatory research, is to rely on management consulting firms who offer global coverage. They are an expensive option, tend to delegate to juniors, and are not necessarily in a position to provide the best data. However, to date, they have been the only option.

Lionbridge provided a different solution. It created a private crowd of accounting and systems experts in all the countries that the software provider needed to cover. The Lionbridge platform allowed that new network of experts to be assembled very quickly, and to cross-validate expert advice as part of the workflow. There were four elements of this crowd solution:

1. Lionbridge was able to source in-country CPA consultants and subject matter experts who were bilingual native-speakers but who were not payroll consultants.
2. The CPAs provided local oversight of accounting best practices based on tax changes in their country.
3. Technical Requirements were defined for implementation by the customer.
4. The system delivered up to 30% in cost savings to the client.
5. Created pressure on accounting consulting service providers to renegotiate deals.

LESSONS: The enterprise crowdsourcing solution was a clear winner on cost – because of output-based pricing, but also because it provided a more predictable management framework.

EXAMPLE 2. TRANSLATING PRIMARY ASSETS

You are a major travel site, with localized content in 30 countries, hosting tens of thousands of reviews of travel experiences from valued customers. But there's a problem: Your reviews are in different languages and often inaccessible to people, even those who might be bilingual.

When you try the expensive task of translating them across multiple local sites, you find your officially qualified translators fail to render the spontaneity and nuance of a real traveller. When you try to translate using machine translation you find the quality and context is lost from the original review. How do you manage this huge content repository, one that is key to your business, so that you extract all the value across multiple languages of such a key asset in an affordable way?

That task is almost unaffordable outside a crowdsourced solution for the required quality, and it proves that crowdsourcing makes new strategies possible.

What Lionbridge was able to provide here was access to a private crowd specifically skilled in fashioning this type of ad-hoc, user-generated content into multiple languages. They assembled a multilingual team– globally–and a workflow to manage colloquial translations that were fit for purpose and affordable because of the output-based pricing model.

Now, for example, a Spanish visitor to the site can read reviews from travellers from across the world, all in Spanish and all with the tone of an authentic traveller. What's more, the enterprise crowdsourcing solution allowed the company to ramp up translation when it wanted to, pay for only the work that is performed well and ramp down costs immediately when the bulk of the work was done.

1. An enterprise crowdsourcing approach made the impossible not only possible but also highly affordable.
2. Enterprise crowdsourcing offered a creative strategy that allowed the client to explore new options, in this case a multilingual review repository.
3. By maintaining its own private crowd, a crowdsourcing service provider like Lionbridge can provide you with labor on tap–or capacity on demand–and at a cost that is commensurate with the need.
4. The client in this case got a better experience for its customers, more site visits and increased sales and profitability.

LESSONS: The user-generated-content translation case shows the benefits of flexibility and scalability. The content flow was highly variable, dependent on users entering content after traveling. However, Lionbridge was able to scale its workforce up and down to meet demand. Best of all, the improved customer experience drove real bottom line value.

EXAMPLE 3. SECURE DATA ENTRY

Behind the scenes of routine activities like tax revenue collection, there can be an aspect of seasonality that makes quality control extremely difficult in services that depend on accuracy. Imagine the headaches of maintaining highly accurate data collection while constantly staffing up and down!

The *Pennsylvania Department of Revenue* (PA DOR) processes over 10 million tax returns a year and the quality of essential work began suffering during tax season, which in turn led to increased workloads for examiners in the later stages of the tax cycle. However, the addition of a second shift of seasonal workers created further financial and managerial strains. PA DOR needed to eliminate the cost and burden of staffing and supervising seasonal workers with a solution that would also protect sensitive tax information.

Lionbridge's enterprise crowdsourcing data entry solution, chosen by PA DOR, offers a secure and cost effective alternative to staffing a full shift of seasonal data entry personnel. With Lionbridge's vcapture Snippet technology, sensitive paper documents and scanned, full-context form images never leave the confines of PA DOR's organization. Lionbridge breaks PA DOR's tax documents into digital image Snippets. The Snippets are assigned a random ID, scrambled to guarantee security, and sent over a secure internet connection to Lionbridge's remote Cloud network.

The Snippet images are then dispatched to data entry workers who enter and verify the data using a web browser with a secure connection. Using the Lionbridge Secure Split Technology, fields containing sensitive information, such as Social Security numbers and credit card numbers, are further separated into smaller Snippets. All Secure Split Snippets are distributed to different crowd workers to protect further the confidentiality of the data. To ensure a 99.99% accuracy level, each Snippet is validated by at least two independent sources before the data is returned to PA DOR's system.

The *Pennsylvania Department of Revenue* now handles the peak processing demands of tax season without the cost and burden of training and supervising seasonal workers. Document turnaround time has improved 70%. In addition, PA DOR has cut costs and eased data processing burdens across all department operations while improving data accuracy.

LESSONS: The ability to meet seasonal demand without overloading an existing system demonstrates the flexibility and productivity of a crowdsourced solution. Without the availability of a crowd, officials were forced to do seasonal hires and to take on the additional burden of training and management at the same time as trying to meet peak demand. The crowd solves that problem beautifully–at a cost that is entirely consistent with the crowdsourced philosophy: Payment by results.
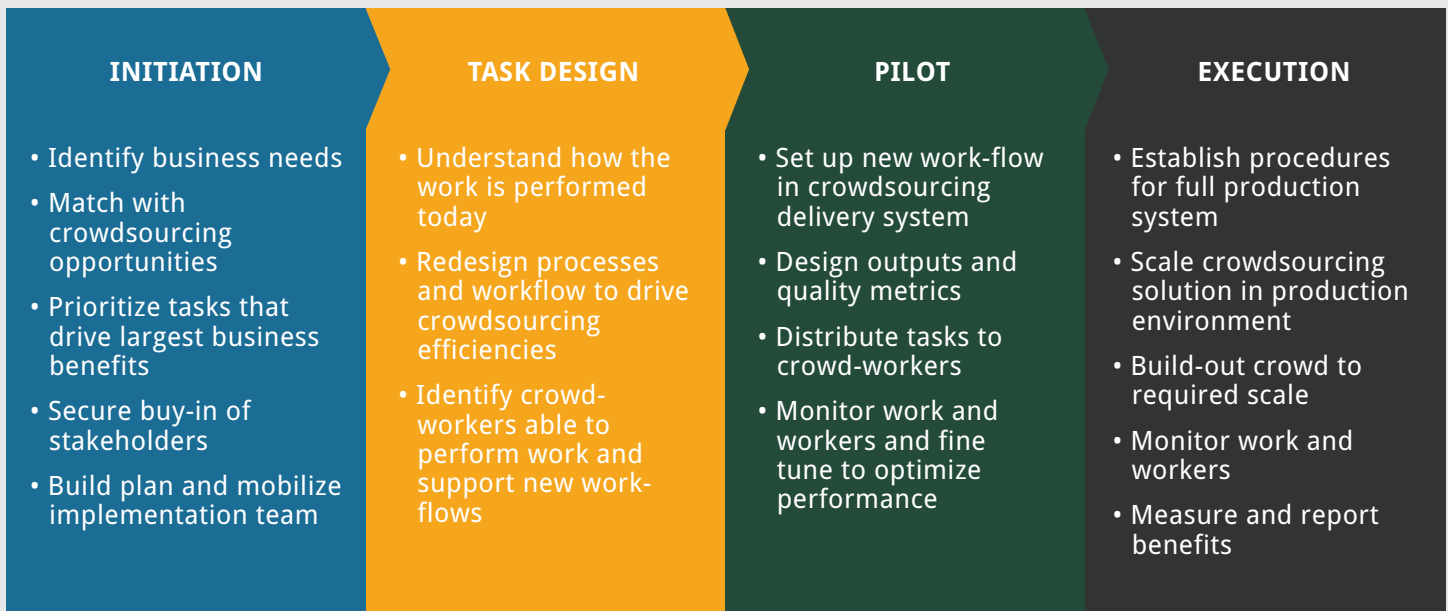
SUMMARY OF BENEFITS FOR ENTERPRISE CROWDSOURCING

- Enterprise Crowdsourcing creates an opportunity for unique flexibility by reformulating work into tasks that are appropriate to specific skills.
- It creates new strategies, opens up new possibilities and accelerates go-to-market times.
- It can improve work performance as well as reduce costs.
- It makes costs more predictable.
- It makes organizations more productive.

FOUR STEPS TO APPLYING CROWDSOURCING IN THE ENTERPRISE

What does it take to begin profiting from crowdsourcing? Enterprise crowdsourcing providers like Lionbridge provide streamlined processes and high performance platforms that give enterprises turnkey access to crowdsourcing's benefits. Here are four quick steps:

FIGURE 5. FOUR STEPS TO APPLYING CROWDSOURCING

INITIATION	TASK DESIGN	PILOT	EXECUTION
• Identify business needs • Match with crowdsourcing opportunities • Prioritize tasks that drive largest business benefits • Secure buy-in of stakeholders • Build plan and mobilize implementation team	• Understand how the work is performed today • Redesign processes and workflow to drive crowdsourcing efficiencies • Identify crowd-workers able to perform work and support new work-flows	• Set up new work-flow in crowdsourcing delivery system • Design outputs and quality metrics • Distribute tasks to crowd-workers • Monitor work and workers and fine tune to optimize performance	• Establish procedures for full production system • Scale crowdsourcing solution in production environment • Build-out crowd to required scale • Monitor work and workers • Measure and report benefits

STEP 1.   INITIATION

Companies that want to take advantage of crowdsourcing need to identify the tasks that would give them the most benefit at an attractive level of effort, or in other words, where is the bang for the buck? Companies need to identify tasks that fill that criterion. A client-user may have a strong sense of a problem that needs to be solved and, in conjunction with a crowdsourcing service provider like Lionbridge, can drill down to the precise tasks that could benefit from flexible supply and output-based pricing. The user organization also needs to consult with all stakeholders who will be affected by the efficiencies crowdsourcing will bring. We refer to that review process as "initiation" because, in a sense, it introduces everyone to the possibilities and it consists of the design of a new process.

STEP 2.   TASK DESIGN

Crowdsourcing normally involves task redesign. The traditional way of performing tasks is, in itself, a design that is often optimized for an in-house workforce. But in crowdsourcing a supplier is looking to match a task design with an appropriate worker as well as to allocate tasks in a way that guarantees privacy and security to the client.

That might mean breaking a task down in new ways so that task elements can be assigned to different workers, with much more targeted skill sets. Naturally, then, an integral part of the process is to build profiles of the types of workers the tasks need.

STEP 3.   PILOT

The third step is to implement the new workflow and to pilot it. The workflow consists of all steps from task creation and allocation to output delivery. Imagine you have identified one or more tasks that look like good candidates for creating benefit.

The pilot will give you a low-cost way of testing your assumptions about those tasks. Pilots should include as many as possible of the roll-out conditions in order to be effective tests. That means they should include worker selection (with a limited number of people), worker on-boarding routines, quality assurance procedures, goal setting, and the usual pilot attributes such as validating or disproving assumptions. The main out of the pilot is the actual roll-out plan for implementation.

STEP 4.   EXECUTION

The crowdsourcing provider will now go out and scale the solution by assimilating additional workers from its own worker base and/or by recruiting a qualified crowd as appropriate.
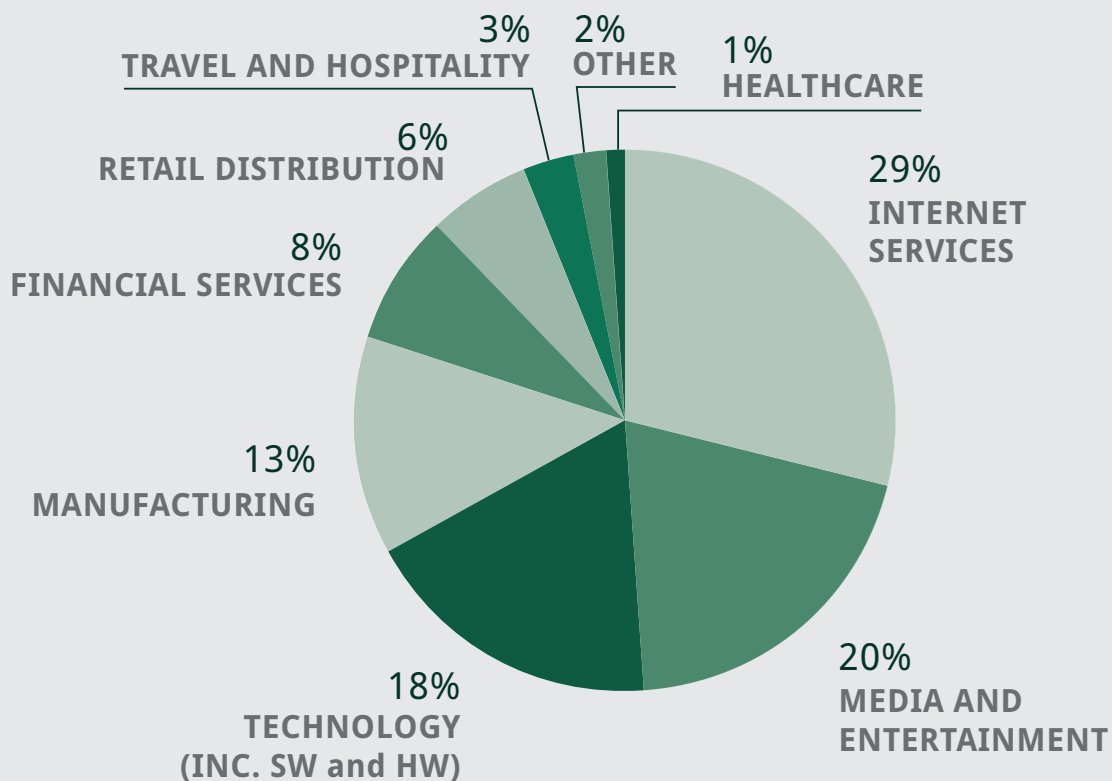
Before launch, the tasks are fully bedded into the team's routines, including the QA aspects (an area that is referred to as adjudication in crowdsourcing)

The client dashboard is finalized and tasks are released to the crowd. The system is underway.

USE CASES

Enterprises are making increased use of crowdsourcing and the examples are varied. In this section we'll look at some examples and benefits. *Figure 6* is a breakdown of enterprise crowdsourcing activity by sector in 2011. Note the underserved industries where the depth of opportunities to benefit through crowdsourcing is just beginning to be realized. We can't address every sector in this paper, but below we address examples available to a select five.

FIGURE 6. CROWDSOURCING ACTIVITY BY BUSINESS SECTOR

3%
TRAVEL AND HOSPITALITY

2%
OTHER

1%
HEALTHCARE

6%
RETAIL DISTRIBUTION

29%
INTERNET SERVICES

8%
FINANCIAL SERVICES

13%
MANUFACTURING

18%
TECHNOLOGY
(INC. SW and HW)

20%
MEDIA AND ENTERTAINMENT

Source: Crowdsourcing.org, 2011

HIGH TECHNOLOGY

Crowdsourcing in technology companies is where the practice of crowdsourcing to meet business needs all began. The use cases that come out of these industries provide important insights for non-technology companies into the types of problems and opportunities crowdsourcing can address.

TECHNOLOGY APPLICATIONS	EXAMPLES
Search relevance	The world's leading provider of Internet products and services needed to measure the effectiveness of modifications to its search algorithms - the core of its business. By using the crowd, this customer was able to tap into the power of a skilled, secure, global workforce to verify and validate the relevance of search data in local markets.
User-generated content translation	Millions of user reviews are generated by consumers of products and services on an annual basis. Few companies have been able to reuse this content in an effective and cost efficient manner through traditional translation methods. However, a number of enterprise level organizations are utilizing the native language capability of global crowds to translate this content, which is often in small containable snippets of text. The reviews are routed to crowd workers with the ability to translate the original user-generated content into the target languages._More detail for this example in the "Success Stories" section._
In-country testing	Testing applications and services on multiple platforms and across multiple geographies, in-country testing is focused on delivering testing services to customers who have a physical location requirement or require local credentials to fully test their products or services. The service line provides access to a global network of experienced testers, completing testing across areas such as payments testing, location based testing, functional testing and competitive analysis testing.
Metadata production	Effective content use -- for example via search, requires good metadata and Lionbridge can help. Enterprises are processing internal knowledge repositories to create metadata, thereby enabling improved search throughout their Intranets and making more institutional knowledge available to their workforces.

BANKING, FINANCE SERVICES AND INSURANCE (BSFI)

Crowdsourcing in the financial services industry is providing exceptional benefits in ensuring data accuracy, cleanliness and normalization. Enterprise Crowdsourcing is enabling this sector to gain competitive advantage from big data analytics by helping companies get their data into a consumable state. That's the big picture. At a more granular level, crowdsourcing is helping BFSI companies reduce the cost of business processing in areas such as claims and mortgage processing. Additionally, crowdsourcing is helping to improve customer service through better metadata production for information, meaning customers can access information far more easily.

BFSI APPLICATIONS	EXAMPLES
Regulatory compliance monitoring	In a classic enterprise crowdsourcing project, Lionbridge recruited financial experts from around the world to help a global client to keep its accounting and finance modules up to date. *More detail for this example in the "Success Stories" section.*
Mortgage processing	Enterprises are beginning to explore on-shore applications of crowdsourcing too. For example, a US financial institution used US rural workers to support specific mortgage processing tasks. Utilizing skilled and secure crowd workers to complete discrete and criteria based reviews of mortgage applications currently being completed by internal staff has saved both time and money in the processing cycle.
Invoice processing	Invoice processing is a time consuming activity–the bulk of the activity and time is spent on low level activities such as identifying invoice numbers on a variety of forms and documents and indexing them in the AR/AP system. Leveraging crowd workers to identify, capture and index these invoices saves AR/AP departments valuable time and money so they can focus on their core activities.
Data entry	No OCR system is 100% effective and all require some level of human intervention to get scanned forms/data into databases. But maintaining an onsite workforce for the purposes of data entry is expensive. Lionbridge provides a secure, effective and low-cost data entry alternative through crowdsourcing. *More detail for this example in the "Success Stories" section.*
Loan data clean-up	USAid's data on the geographical distribution of loans presented it with a problem. They wanted to make the data public but the geographical element was inconsistent. It needed a clean-up and USAID turned to the crowd to provide it. Any variety of the same requirement, data cleaning, can be met by the crowd.

RETAIL

Enterprise crowdsourcing in retail creates advantages that were simply not available in the past, for example, supporting retailers in creating online product catalogues, adding and tagging images and creating useful metadata, and producing better product descriptions. Crowdsourcing has been used by the retail sector to improve social media communications by introducing a human element to sentiment analysis; to provide pre-launch market-testing for products; create online content for products; provide market research; set up extensible help desk for product launches; and to provide translation of product information for online stores.

RETAIL APPLICATIONS	EXAMPLES
Market research	Crowdsourcing hasn't traditionally been linked with market intelligence but it is proving to be a perfect vehicle. Domain experts can be rapidly identified in the crowd to help companies research specific industries and markets that they are seeking to enter or to provide insight into new or target clients. The crowd can often gather data faster and better than traditional consultants.
Improving social media communications	Sentiment analysis provides an indicator for how products and brands are regarded by customers. Typically, sentiment analysis has an error rate well above 20%. Introducing human analysis to spot nuances like sarcasm identifies what customers are really thinking.
Content production	Content is a mainstay of online retailing but the flow of content can be uneven in the early phases of an initiative. By harnessing the crowd, retailers can increase the amount of content available to its consumers, while also increasing the overall quality and suitability of what content to supply and when. The crowd can be used to create small snippet productdescriptions, but also to enhance current data by tagging it with different attributes or applying classifications, so it can be easily filtered or exposed to consumer searches.
Loyalty program application processing	A large Pet Supply company had an in-house processing group for their loyalty program. Consumer data from the applications was not getting into the database in a timely manner. Lionbridge was engaged to help speed the data extraction turn-around from weeks to days. The marketing department commissioned a study on the success rate of targeted award deals/coupons for new members, and found that timely contact was critical. When contact was made within 5-7 days, the rate at which a new member returned to a store went up by 50%, which directly improved sales.
Content verification	Using the crowd is the most efficient way of collecting information on local sources and has been used, for example, by companies in the real estate sector to verify local property listings.

TRAVEL AND HOSPITALITY

The hospitality industry is profoundly impacted by crowdsourcing, for example, on sites like TripAdvisor and Expedia, and through reviews on sites like booking.com, and peer-to-peer accommodation providers like AirBnB, crashpadder and homeaway. The industry can respond to these developments through its own crowdsourcing strategy. Perhaps the most significant area is in translating and localizing information, whether in reviews or in maps, so that a global travel user base can access a venue's information in their language of choice.

HOSPITALITY	EXAMPLES
User-generated content translation	The hospitality industry needs to provide good user experiences through it web sites. That's best done by presenting review information in the language of the user, but translation can be expensive. Using a private crowd reduces cost and makes this high conversion strategy possible.
Improving hotel reviews	Research also shows that hotel reviews increase conversions for a hotel if the reviews use good spelling and grammar, regardless of whether the review is negative or positive. That has led to one crowdsourced project to fix faulty reviews without changing the opinions contained in them.
Creating visual reviews	Sites like Room77 and laterooms.com are using travelers to photograph hotel rooms and to highlight good and bad facilities.
Multilingual keyword strategies for SEO	Your visitors could come from anywhere in the world, and you can reach them if your SEO strategy includes keywords in their language. Understanding SEO in multiple countries though is difficult, unless you have access to a private crowd with local know-how and local language skills.

HEALTHCARE/LIFE SCIENCES

The Financial Times recently compared the employee and customer management ratio of companies in healthcare and social media and discovered that Facebook manages 845m users with 3,200 staff, while large health plans serve about 60m customers with 30,000 to 90,000 staff: "...that's one Facebook staffer for every 264,000 users, while each health plan staffer serves on average only 1,500 customers." Throughout the healthcare industry staffing costs are susceptible to crowdsourced alternatives and in surprising ways.

Crowdsourcing can help alleviate the cost of researching highly expensive-to-treat rare diseases; help deliver up-to-date content adapted to local markets; and support clinical trials. The benefits that crowdsourcing bring are almost certainly related to cost, but they are proving valuable in addressing business issues in highly specialized areas.

HEALTHCARE APPLICATIONS	EXAMPLES
Medical forms processing	The crowd can be used to process many medical forms. For example, the Lionbridge crowd is used to process annual flu-shot vaccinations forms. We leverage our privacy enabled snippet technology and ensure our data processing is HIPPA compliant to allow our workers to enter the necessary patient data for the flu form processing by the Provider.
Content production	As in other verticals, healthcare companies are using the crowd to create content, but with a specific emphasis on creating local market versions of health information.
Product development	The challenge-based website Innocentive recently used the crowd to generate the discovery of a glucose-responsive insulin drug.
Data mining	The HealthCare Cost Institute recently opened up 5 billion health records for the public to work on as a research base. Though not an official crowdsourcing project, it has allowed anybody to explore the data.
Directory building	Creating a directory with integral mapping has been a self-starter project by a doctor Andrew Sprong that eventually documented all European medical specialists who use the social media site, Twitter.

APPENDIX

Lionbridge

Successfully implementing an enterprise crowdsourcing solution requires a partner with a highly developed infrastructure, global reach, process management expertise, use case experience, and a long-term commitment. Lionbridge is that partner.

About Lionbridge Enterprise Crowdsourcing

Lionbridge Enterprise Crowdsourcing is a business division of Lionbridge Technologies, Inc. (NASDAQ: LIOX), (Lionbridge), and provides data management, language, testing and captive crowd solutions that enable clients to optimize, release, manage, test and maintain applications and content in global markets.

Lionbridge Enterprise Crowdsourcing is putting its expertise and experience to work helping enterprise customers:

- Attain levels of operating efficiency never achievable before.
- Implement true output based labor models enabling a 100% on demand flexible workforce.
- Reduce labor costs by at least 20-40%.
- Enter into new global markets resulting in new sales and increased revenue.

Enterprise crowdsourcing customers have strict requirements for scale and security. Every member of the Lionbridge crowd is screened and validated; our tools and services run on high-end technology and are supported by an organization with a physical presence in 26 locations around the globe.

More information at www.thesmartcrowd.com

What makes Lionbridge, The Smart Crowd? It starts with the ability to develop a massive group of people into working units that are capable and reliable. We leave nothing to chance. Each worker is vetted and qualified for the work to which they are assigned. Crowd members sign an agreement that they will never reveal anything about the work they do as part of our crowd. We organize the crowd's work and provide clear guidelines for producing quality output. We interact with workers over high-end, secure platforms, and ensure work is being completed to the client's specifications. *The Smart Crowd* is allowing crowdsourcing to make its way into the enterprise.

About massolution

Massolution is a unique research and advisory firm specializing in the crowdsourcing and crowdfunding industry. Massolution works with leading organizations to deliver crowdsourcing and crowdfunding business models that access an on-demand, scalable workforce to deliver improved business performance and to drive product and service innovation and enhanced levels of customer engagement. Our team has experience working in large enterprise environments designing, implementing, and managing crowdsourcing initiatives. Massolution also operates the industry website Crowdsourcing.org.

More information at www.massolution.com or www.crowdsourcing.org or via contact@crowdsourcing.org.