



AI for Good

**NONPROFIT TRENDS
& USE CASES**



AI for Good

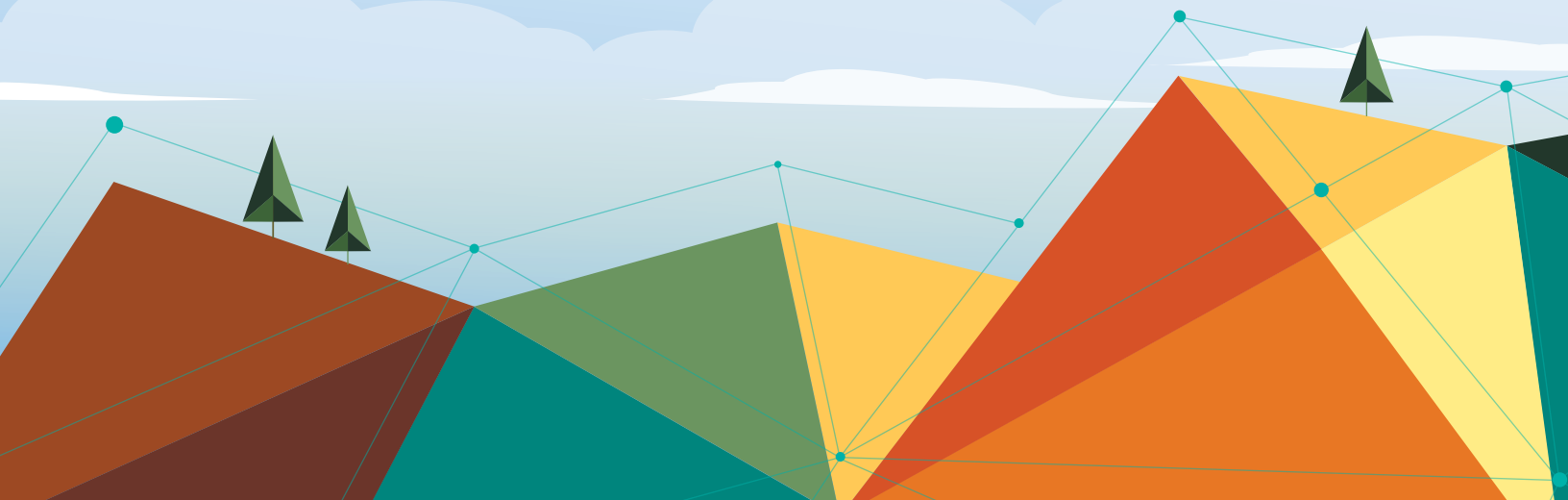
The idea of Artificial Intelligence (AI) is as old as the computer, but it's only recently that the combination of ubiquitous data collection, cheap computing power, and advanced machine learning algorithms have turned it into an industrial and consumer commodity. Even small organisations now have access to AI, through cloud services like Salesforce Einstein, or even on a desktop computer, through programming tools like scikit-learn.

While self-driving cars and voice assistants like Alexa may get the headlines, we want to highlight the applications that serve the social good sector. This e-book is written for nonprofits and social service providers who want to better understand how AI can improve their operations and efficiencies to help achieve their mission.

We'll cover:

1. What is AI?
2. Why nonprofits should be involved
3. Imagining a better future
4. Using AI to advance your mission
5. How to keep AI ethical

WITH THAT, LET'S JUMP IN!



1

What is AI?

ARTIFICIAL INTELLIGENCE: A BRIEF HISTORY

AI was once the province of scientists and futurists, but quite recently, a revolution in software, hardware, and networks have made AI – and specifically machine learning – an industrial commodity and consumer phenomenon.

Whereas the AI of the 1990s brought us search engines and ad networks, the learning machines of today bring us everything from self-driving cars to programs that detect skin cancer in photographs. New dynasties of technology firms are getting founded. Influential leaders (including our CEO, Marc Benioff) are calling it the “**Fourth Industrial Revolution.**” It’s an exciting time.

AI for everyone is possible thanks to a variety of reasons including:

Big Data

Data is everywhere these days. In fact, 90% of the world's data was created in the last two years. Each device and app you use—phone, email, calendar, CRM—creates data. If you can harness that data, you don't need a team of data entry personnel, database administrators, and data scientists.

-ROLLING STONE

Cheaper Processors

Your iPhone has more than twice the processing power of old mainframe computers. It used to take a warehouse of servers to process AI data. Now processors are cheaper and faster.

-WALL STREET JOURNAL

Better Algorithms

Algorithms are a process or set of rules followed in calculations or problem solving, usually followed by a computer. Back in the day, you needed a team of data scientists to develop complex algorithms. Nowadays, with better technology, algorithms are lightweight and flexible and can be more easily adapted for new uses.

-THE ECONOMIST



So basically...

At a basic level, AI is about making your daily tasks easier and experiences smarter, by embedding predictive intelligence into everyday apps, like:

- Siri acts as a personal assistant, using voice processing
- Facebook provides recommended photo tags, using image recognition
- Amazon provides recommended products, using machine learning algorithms
- Google Maps provides optimal routes to your desired location

How does it all work?

In a nutshell, creating artificial intelligence via machine learning is about pattern matching with lots of examples. It's kind of like training a cat, dog, or child, only the machine is not quite as smart as a child. You have to give it examples of labeled data: this is an apple, that's an orange. Only instead of a child learning what something is by having the name repeated with the fruit item once or twice, machine learning requires thousands of examples to be "trained."

With Salesforce Einstein, every key feature of the Salesforce platform—from workflow, to analytics—will embed AI seamlessly. That means you can bring AI to everyone. To learn more, take a look at our [Get Smart with Salesforce Einstein Trailmix](#).

How your nonprofit can start using AI:

1. CAPTURE DATA

AI projects need a lot of data to develop predictive models.

2. LEARN FROM DATA

Think about what organisational or business questions you want to solve. Start with the questions, for example, 'which donors are more likely to increase their recurring gift?' and then with the help of deep learning and natural language processing tools, you can glean insights from your data.

3. ACT ON INSIGHTS

Identify critical moments in your process to harness the insights and information learned from your AI, in order to better connect with your customers, constituents, beneficiaries and employees.

Salesforce has built AI into all Salesforce applications to make constituent interactions smarter, through Salesforce Einstein.



2

Why nonprofits should care

AI and machine learning are making their mark as hot topics in the for-profit sector right now. In fact, for-profit organisations with AI expect to see a 39% increase on average in their revenues by 2020, alongside a 37% reduction in costs.

- **ECONOMIC TIMES**

Why nonprofits should care

Overall, AI drives a \$14–\$33 trillion economic impact* which has big implications for the nonprofit sector. Yet, when it comes to technology spend, many nonprofits are constrained by not having as much unrestricted funding as they might like. Many nonprofits may wonder: what does AI mean for them? We see several areas where nonprofits can be involved, and have highlighted important use cases in the next chapter that organisations can take advantage of.

On a global level, the values and principles that nonprofits embody can and should help shape the future of AI. Thought leaders like Cathy O’Neil provide excellent recommendations on how to be involved in shaping policy. One example is that instead of focusing on how to exploit the vulnerable, we could train algorithms to identify people in need of support and get them the resources they need to thrive. Current algorithms that optimise for-profit could be optimising to improve life outcomes for at-risk individuals. It takes humans, acting on values and principles, to figure out what the math should optimise for. For more on this, check out Thrive’s CTO Cheryl Porro’s blog on [principles in AI for Good](#).

*Source: [The Motley Fool](#)

The use of artificial intelligence by nonprofits is projected to grow 361% in the next two years.

**-NONPROFIT TRENDS SURVEY,
SALESFORCE RESEARCH, MARCH 2018**

Venture capital investment in AI doubled to **\$12 billion** in 2017.

-KPMG

In a recent survey of 1,600 executives, 85% plan to train employees about the benefits and use of AI.

-FORBES

On a smaller scale, the potential benefit from using machine learning and AI may be even greater for individual nonprofits than for commercial business, for the following reasons:

1. Nonprofits are typically far more limited in terms of resources especially the most important one, employees time. With AI, your people can cover more ground and become more efficient
2. Nonprofits – especially those with advocacy goals – stand to benefit more from access to more sophisticated metrics, to better understand their audience and their impact on attitudes and behaviors
3. Nonprofits often have limited marketing and communications budgets but personal engagement with supporters and supported is so crucial for long term relationship management. Smarter interactions with constituents is a must.

GovLab is showing the pulse of the “think tank” perspective on AI, and often covers subjects such as health care and activism as they relate to government.

One theme we’ve seen is that success depends heavily on tight engagement between the technologists and “boots on the ground” people.

As leaders of the social impact market, nonprofits need to be part of the conversation and need to lead in defining how AI can be used for good.

Making AI work for good starts with YOU.



3

How will AI help?

We've always looked to technology to assist us in working smarter and faster, but while up to now technology has been reactive, AI allows technology to be proactive. Such a significant advancement in technology can require a mind shift. To get your team thinking about how they can take advantage of a proactive assistant in their work, consider these six modes (a variation on those recommended by Christopher Noessel):

- 1. PREPARE**
- 2. OPTIMISE**
- 3. ADVISE**
- 4. AUTOMATE**
- 5. REDUCE**
- 6. FINISH**

1. PREPARE

How would you use an assistant who is aware of what you need to achieve, and is able to suggest ways to make the most of your time? *For example, an assistant that sees from your calendar that you'll be visiting an important donor at their office next week, and suggests taking advantage of the trip to see another valuable prospect.*

2. OPTIMISE

How would you use an assistant that can explore alternatives and pick the best option for a particular outcome? *For example, whose job it is to experiment with different images and figure out what resonates most with donors.*

3. ADVISE

How would you use an assistant that can observe tasks in progress and suggest better options? *For example, an assistant that suggests ways to make new crowdfunding participants into more effective fundraisers.*

4. AUTOMATE

Are there situations where it's obvious what to do next? *For example, when receiving an email from a donor requesting that you send them email more/less frequently.*

5. REDUCE

How would you use an assistant that can help you filter out noise, so you can focus only on what's significant? *For example, an assistant that learns what sort of news is important to your fundraising activities and what isn't.*

6. FINISH

How would you use an assistant that could identify and close things no longer in use? *For example, disposing of unused medication.*

How will AI help?

These modes are very useful for thinking about how AI might be able to help. But you might still find resistance from people who are skeptical that AI could ever be smart or reliable enough to help with these tasks. In order to respond to this skepticism, try asking:

- *Imagine you had a volunteer doing this task for you; what skills would they need?*
- *What would they need to know or understand in order to be effective?*
- *How did you come to know or understand this yourself?*
- *How would you ensure they were doing the job well? What would you tell them to be careful NOT to do?*

These questions can help you transform general skepticism into more specific requirements around data and internal governance. Of course, as our CEO, Marc Benioff, often reminds us, it's not enough just to do well, we also want to do good. Let's turn to the task of ensuring that you are building and managing your AI in an ethical way.



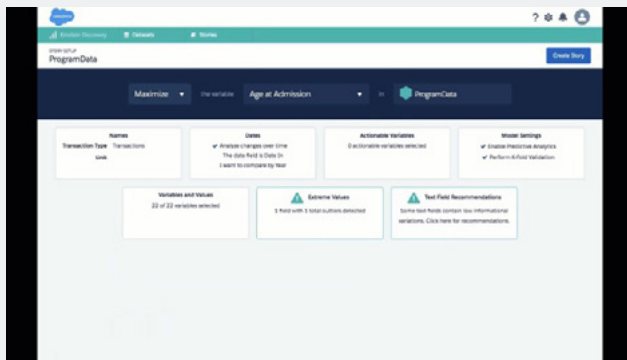
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Using AI to advance your mission

So, what can you do now to prepare your organisation or even start using AI? While AI can seem like a remote concept, tools are already available to enable nonprofit teams to be more effective across fundraising, programs, and engagement. From built-in tools that score donor activity to advanced analytics platforms that allow for data-scientist-like discovery, we'll review some high-level use cases around how nonprofits can and are using AI to impact the world in a positive way.

Programs

In addition to helping nonprofit fundraisers, predictive analytics tools can enable programs teams to be more effective. Understanding the factors that impact program outcomes can aid program managers in providing recommendations, and arming them with powerful tools to influence results. Previously, extensive resources would be required to analyse program data and identify correlations. For the vast majority of nonprofits, the funding to hire data analysts and license the software for this purpose simply wasn't available.



EINSTEIN ANALYTICS FOR NONPROFIT PROGRAMS

Now your nonprofit is not disadvantaged by the lack of resources as predictive analytics tools built into a nonprofit's CRM can fill this gap. Tools such as Salesforce Einstein Discovery can analyse billions of data combinations in minutes to surface predictive insights and provide recommendations, without the use of additional software or statistical models built outside your CRM. Einstein Discovery conducts statistical checks to confirm the models are valid, and is able to generate answers, explanations, and recommendations in a way that is easy for business users to understand, without having a data scientist on staff. Click [here](#) to see a demo of how Einstein Discovery can be used to identify trends and improve outcomes for drug rehabilitation programs, and click [here](#) to take a trail to learn more about Einstein Discovery.

Real world example:

The United Nations projects that there will be 8 billion people on earth by 2024. A growing and changing global population, alters the demand for basic human needs such as food, water, and energy. Available data on evolving human demand is highly fragmented, variable, and challenging to access. Project 8, a collaboration between the United Nations Foundation and The Demand Institute, enables decision-makers around the world to use data to achieve the Sustainable Development Goals such as Zero Hunger.

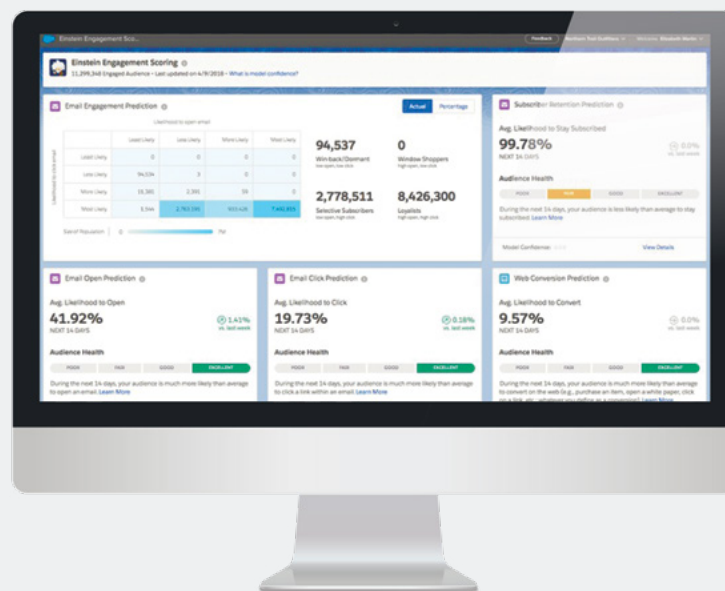
Using the Salesforce Platform, Project 8 brings data together across the public and private sectors into a digital commons. Equipped with tools like Einstein Analytics - AI-powered advanced analytics, global teams are analysing diverse datasets on food security and basic human needs. From this, organisations are able to better understand evolving human demand and are building strategies to better meet the needs of these 8 billion people

[Learn More >](#)



Engagement

What if you knew that some of your constituents were unlikely to open an email, but would positively respond to a text or a Facebook advertisement? What if you could then segment constituents based on these characteristics, placing them on different journeys based on these predictive insights?



EINSTEIN FOR ENGAGEMENT SCORING - FOR BETTER NONPROFIT MARKETING AND COMMUNICATIONS

Marketing Cloud Einstein allows just that. It uses machine learning to analyse patterns and predict the actions that individuals will take, such as open, click through, or unsubscribe when sent an email. The results can then be used by nonprofit marketers to build smarter segments and journeys. A constituent unlikely to open an email can be sent a text, as an example, if this would result in a higher likelihood of engagement.

By automatically optimising segmentation, tools like Marketing Cloud can save staff time, while simultaneously resulting in more successful campaigns.



Get started— your AI journey

Here are some resources for moving forward with data, reporting and artificial intelligence for nonprofits.



1. STRUCTURED DATA

Trailhead Trailmix on getting started with NPSP

2. REPORTING

Trailhead Trail on reports and dashboards

3. AI AND PREDICTIVE ANALYTICS

Einstein Trailhead Trail

While these are the main examples of the ways in which nonprofits are starting to think about AI, it is only the starting point. Nonprofits will soon be able to take advantage of:

- **Intelligent Communities**, which uses AI to surface recommendations for files, groups, articles, and individuals to follow based on browsing history and who you are connected with.
- **Intelligent email features**, such as automated activity capture and automatic identification of new contacts, replacing the need to manually log activities and contacts in your CRM
- **Intelligent Lead Scoring**, which predicts the likelihood of lead conversion based on characteristics of previous customers
- **Intelligent Case Classification**, which will predict field values and automatically classify cases as they come in, and push recommendations to agents
- **Service Bots**, which will deflect routine requests by collecting and qualifying customer data via chat and then seamlessly hand customers off to human agents if needed, reducing resolution time
- **Intelligent Social Listening features**, such as identifying influencers, automatically classifying sentiment, filtering out social spam, and automatically classifying posts for further follow up if needed
- **Smart eCommerce features**, which will provide features such as predictive sort and smart product recommendations for nonprofits who have eCommerce requirements
- **APIs for image classification, object detection, natural language processing, and more**, which can be used to extend applications for custom use cases

Click [here](#) to take a deep dive into AI concepts, and visit trailhead.einstein.com to learn more about the tools available via the Salesforce platform.

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How to keep AI ethical

As you think about how and when to get started with AI at your nonprofit, here are a few principles and processes to keep in mind.

AI is not yet smart enough to know right from wrong, so it's up to its builders and users to bring their own moral principles to the project. That means: its up to you!

If you're working in the social good space, you've likely committed to solid principles already which is a great thing as principled users of AI will promote principled use of AI.

How to keep AI ethical

The best way to ensure that AI is used responsibly, is to insist that its builders commit to principles. If you are building AI and looking to build out a team and processes, keep the following tips in mind:

1. BUILD A DIVERSE TEAM

Recruit for a diversity of backgrounds and experience. Lack of diversity creates an echo chamber and results in insights and behaviours that reflect internal biases (which may be conscious or unconscious).

2. CULTIVATE AN ETHICAL MINDSET

Ethics is a mindset, not a checklist. Empower employees to do the right thing. Individual employees must be able to empathise with everyone that their AI system impacts. Companies can cultivate an ethical mindset through [courses](#), [in-house support groups](#), and [equality audits](#).

3. CONDUCT A SOCIAL SYSTEMS ANALYSIS

Involve stakeholders at every stage of the product development lifecycle to correct for the impact of systemic social inequalities in AI data. The Salesforce.org team develops [NPSP](#) and [HEDA](#) as open source platforms and gets input from the community at multiple annual events called Community Sprints. Another idea is to create an “unconference” where you invite a diverse group to come together and let people who show up share their knowledge. You can use the same practice to make your stakeholders part of your team.

4. BE TRANSPARENT

To be ethical, you need to be transparent to yourself, your constituents or customers, and society. This includes understanding your values, knowing who benefits and who pays, giving users control over their data, and taking feedback.

5. UNDERSTAND YOUR VALUES

Examine the outcomes and trade-offs of value-based decisions. An individual’s or organisation’s values may come into conflict when making decisions, which results in compromises. When trade offs are made, they must be made explicit to everyone affected. This can be difficult if AI algorithms are “black boxes” preventing people from knowing exactly how decisions are made.

6. GIVE USERS CONTROL OF THEIR DATA

Allow users to correct or delete data you have collected about them. Nonprofits can end up with a lot of data on their constituents depending on the various touch points they may have online and from internet-enabled (IoT) devices.

7. PROTECT YOUR DATA

For-profit companies almost always consider data security as part of business operations. It's the same for nonprofits. Since many nonprofits don't have dedicated IT staff, and AI relies on large datasets, how nonprofits collect and store that data can be a liability for at-risk populations, as well as the nonprofits serving them. One straightforward way to improve your data security is to have two-factor authorisation for both users and API access as a way to protect your users and your organisation's data. For more on data protection, see [what Salesforce is doing with GDPR](#) (the General Data Protection Regulation guidelines from the European Union, in effect May 2018)

8. TAKE FEEDBACK

Allow users to give feedback about inferences the AI makes about them. Being transparent about these predictions and allowing individuals to give feedback not only enables you to improve the accuracy of your model, but it also allows you to correct for discrimination.



“Creating simplicity from complexity can change how we see the world.”

-ALBERTEINSTEIN

Conclusion

AI is and will continue to revolutionise the way we engage with technology. There are already simple ways to begin using AI for your nonprofit processes.

For nonprofit organisations in particular, much more challenging questions like “How can AI tools really help us make an impact?” will arise, because mission performance will so often be a matter of understanding – and optimising for – subjective human values. Writing an algorithm that maximises income forecasting accuracy is not trivial. But, writing algorithms is fast compared to agreeing on the answers for moral questions like “What is the optimum balance between years of life, and quality of life?” “What are the best measures of ‘equal opportunity’ in education and employment?” “To what degree does ‘protect the planet’ mean protecting it from people, or making it comfortable for people?”

Whether you currently use technology or are considering doing so, we envision more nonprofits participating in the trend of what we call “AI for Good.”

Interested in
learning more?

**HERE ARE SOME RESOURCES
WE FOUND INTERESTING:**

- The **Asilomar Principles** from the **Future of Life Foundation**, which its authors hope will guide advanced AI research.
- The **ACM Code of Ethics**, which the **Association for Computing Machinery (ACM)** publishes.
- The Salesforce **value of Trust** and the associated rules regarding the protection of our customers' data.
- **How to Build Ethics into AI**, part **I** and **II**, by UX Architect Kathy Baxter.
- Asimov's fictional **Three Laws of Robotics** and principles of **Calm Technology** by Amber Case, for fun and inspiration.

