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Where we are, and what comes next.

James Borthwick
PDFTron Systems, Inc.
December 2014

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Outline:

- What is PDF collaboration?
- How do we collaborate today?
- How might we collaborate in the future?

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What is PDF collaboration?

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What is PDF collaboration?

A Citizen's Guide to the 2013 Financial Report of the U.S. Government

is affected by changes in various asset and liability balances, including, but not limited to: (a) net property, plant, and equipment, the costs of which are recorded in the budget as outlays when purchased but are capitalized as assets and included in net operating cost as depreciation expense over the useful life of the asset, (b) the valuation of certain assets, such as investments, and (c) insurance and guarantee loan program liabilities. Together, the *Budget* and the *Financial Report* present complementary perspectives on the Government's financial position and condition.

What Came In and What Went Out

What came in? Chart 2 shows that increases in each of the three revenue categories presented (individual income tax and withholdings, corporation income taxes, and other revenue) combined to increase total Government revenues by \$324 billion (12.9 percent) to more than \$2.8 trillion for FY 2013. This was primarily due to an increase in ordinary, capital gains, and dividend income tax rates for individuals, coupled with an increase in corporation income tax collections and a reduction in tax refunds. These increases largely stem from the implementation of the American Taxpayer Relief Act (ATRA) of 2012, the expiration of payroll tax relief provisions, and the ongoing economic recovery. Together, individual income tax and tax withholdings, and corporation taxes accounted for about 87 percent of total revenues in FY 2013. Other revenues include excise and unemployment taxes, and customs duties.

What went out? The Government derives its net cost (\$3.7 trillion in FY 2013) by subtracting revenues earned from Government programs (e.g., Medicare premiums, national park entry fees, and postal fees) from its gross costs (\$3.9 trillion in FY 2013) and adjusts the amount for gains or losses from changes in actuarial assumptions used to estimate future liabilities for federal employee and veteran benefits. The Government deducts taxes and other revenues shown in Chart 2 from its net cost to arrive at its "bottom line" net operating cost, which decreased by \$511 billion (38.8 percent) to \$805 billion in FY 2013.¹ Much of this decrease was attributable to the revenue increases mentioned above, as well as a \$158 billion decrease in total net cost. A significant driver of this net decrease was a \$189 billion decrease in certain actuarial cost estimates for federal employee and veteran benefits, especially at the Department of Defense (DOD).

Chart 2
Government Taxes and Other Revenues

Fiscal Year	Other Revenue	Corporation Income Taxes	Individual Income Tax and Withholdings	Total
2009	\$1,775.0	\$596.1	\$1,095.0	\$2,466.1
2010	\$1,792.0	\$600.0	\$1,112.0	\$2,504.0
2011	\$1,885.4	\$622.9	\$1,131.6	\$2,639.9
2012	\$1,825.0	\$622.9	\$1,131.6	\$2,579.5
2013	\$1,884.6	\$622.9	\$1,268.2	\$2,775.7

Chart 3
Net Cost: FY 2013 (\$3.7 trillion)

Category	Percentage
All Other	39%
Social Security Administration	24%
Department of Defense	18%
Department of Veterans Affairs	10%
Department of Health and Human Services	9%

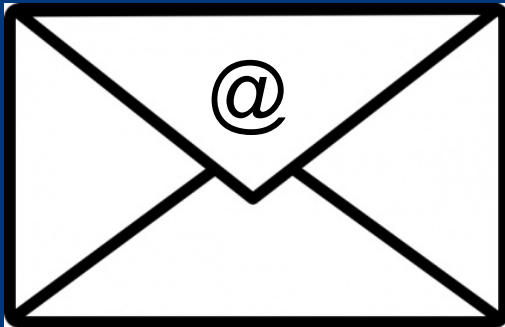
¹ The Government also makes adjustments for "unmatched transactions and balances" to bring certain accounts into balance for such items as statements and errors in federal agency reporting and unrecorded intragovernmental transactions and balances between agencies.

iii

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How do you collaborate today?

- Email



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iii

Chart 2
Government Taxes and Other Revenues

Category	2009	2010	2011	2012	2013
Other Revenue	\$1,775.0	\$1,792.0	\$1,885.4	\$1,825.1	\$1,884.6
Corporation Income Taxes	\$965.1	\$1,000.0	\$1,022.9	\$1,016.6	\$1,075.7
Individual Income Tax and Tax Withholdings	\$1,775.0	\$1,792.0	\$1,885.4	\$1,825.1	\$1,884.6
Total	\$4,515.1	\$4,584.0	\$4,793.7	\$4,667.7	\$4,844.9

Chart 3
Net Cost: FY 2013 (\$3.7 trillion)

Category	Percentage
Department of Defense (DOD)	34%
Department of Veterans Affairs	10%
Department of Health and Human Services	3%
Department of Education	2%
Department of Justice	1%
Department of Agriculture	1%
Department of Labor	1%
Department of State	1%
Department of Energy	1%
Department of the Interior	1%
Department of Transportation	1%
Department of Commerce	1%
Department of Housing and Urban Development	1%
Department of Social Security Administration	1%
Department of the Treasury	1%
Department of the Environment	1%
Department of the Navy	1%
Department of the Air Force	1%
Department of the Marine Corps	1%
Department of the Coast Guard	1%
Department of the Army	1%
Department of the Navy	1%
Department of the Air Force	1%
Department of the Marine Corps	1%
Department of the Coast Guard	1%
Department of the Army	1%

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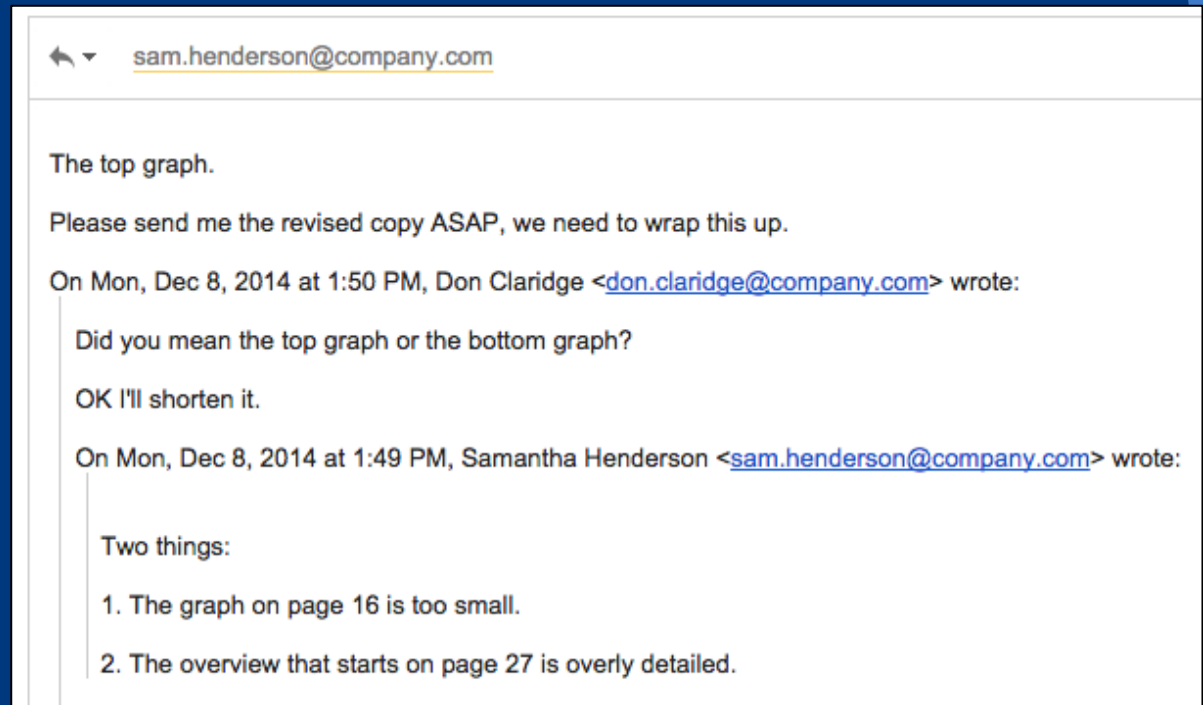
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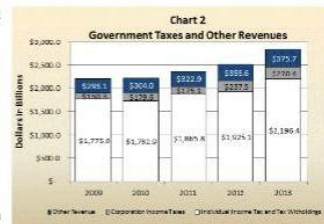
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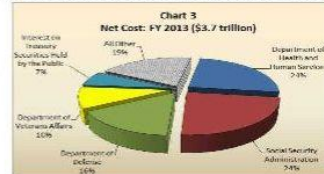
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What went out? The Government derives its net cost (\$3.7 trillion in FY 2013) by subtracting revenues earned from Government programs (e.g., Medicare premiums, national park entry fees, and postal fees) from its gross costs (\$3.9 trillion in FY 2013) and adjusts the amount for gains or losses from changes in actuarial assumptions used to estimate future liabilities for federal employee and veteran benefits. The Government deducts taxes and other revenues shown in Chart 2 from its net cost to arrive at its "bottom line" net operating cost, which decreased by \$511 billion (38.8 percent) to \$805 billion in FY 2013.¹ Much of this decrease was attributable to the revenue increases mentioned above, as well as a \$158 billion decrease in total net cost. A significant driver of this net decrease was a \$189 billion decrease in certain actuarial cost estimates for federal employee and veteran benefits, especially at the Department of Defense (DOD).



¹ The Government also makes adjustments for "unmatched transactions and balances" to bring certain accounts into balance for such items as restatements and errors in federal agency reporting and unrecconciled intragovernmental transactions and balances between agencies.

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Highlight
Henry: 2014-12-05 16:21:50
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Government Taxes and Other Revenues

Category	2009	2010	2011	2012	2013
Other Revenue	\$296.1	\$304.0	\$322.9	\$355.6	\$375.7
Corporation Income Taxes	\$570.8	\$579.9	\$583.8	\$712.2	\$720.6
Individual Income Tax and Withholdings	\$1,775.0	\$1,792.2	\$1,885.6	\$1,925.1	\$1,996.4
Total	\$2,775.0	\$2,800.0	\$2,800.0	\$2,800.0	\$2,896.4

Chart 3
Net Cost: FY 2013 (\$3.7 trillion)

Category	Percentage
Social Security Administration	24%
Department of Health and Human Services	23%
Department of Defense	16%
Department of Veterans Affairs	10%
Department of Education	6%
Other	15%

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Chart 2
Government Taxes and Other Revenues

Category	2009	2010	2011	2012	2013
Other Revenue	\$1,775.0	\$1,792.0	\$1,885.8	\$1,925.5	\$1,196.4
Corporation Income Taxes	\$261.3	\$268.0	\$322.9	\$318.6	\$375.7
Individual Income Taxes and Withholdings	\$1,513.7	\$1,522.0	\$1,697.1	\$1,717.7	\$1,724.6

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Move this under the chart.

What went out? The Government derives its net cost (\$3.7 trillion) by subtracting revenues earned from Government programs (e.g., Medicare, Medicaid, Social Security, and postal fees) from its gross costs (\$3.9 trillion in FY 2013) and adjusts the amount for gains or losses from changes in actuarial assumptions used to estimate future liabilities for federal employee and veteran benefits. The Government deducts taxes and other revenues shown in Chart 2 from its net cost to arrive at its "bottom line" net operating cost, which decreased by \$511 billion (38.8 percent) to \$805 billion in FY 2013.³ Much of this decrease was attributable to the revenue increases mentioned above, as well as a \$158 billion decrease in total net cost. A significant driver of this net decrease was a \$189 billion decrease in certain actuarial cost estimates for federal employee and veteran benefits, especially at the Department of Defense (DOD).

Chart 3
Net Cost: FY 2013 (\$3.7 trillion)

Category	Percentage
Department of Health and Human Services	24%
Social Security Administration	24%
Department of Defense	16%
Department of Veterans Affairs	10%
Interest on Treasury Securities Held by the Public	7%
Other	15%

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Highlight

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Matt: 2014-12-05 16:22:02
I just did, it's correct.

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Chart 2
Government Taxes and Other Revenues

Year	Other Revenue	Corporation Income Taxes	Individual Income Taxes and Withholdings
2009	\$2,775.0	\$296.1	\$1,701.0
2010	\$1,782.9	\$304.0	\$1,957.9
2011	\$1,885.6	\$322.9	\$1,863.8
2012	\$1,925.5	\$310.6	\$1,713.8
2013	\$2,196.4	\$375.7	\$1,920.6

Ellipse

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Comment

Henry: 2014-12-05 16:20:55
Is the footnote necessary?

Matt: 2014-12-05 16:21:19
Yes, it is absolutely critical.

Henry: 2014-12-05 16:21:28
I disagree, please remove it.

its net cost (\$3.7 trillion) for programs (e.g., Medicare, Medicaid, Social Security) (\$3.9 trillion in FY 2013) and adjusts the amount of net operating cost. Assumptions used to estimate future liabilities for government deducts taxes and other revenues from its "bottom line" net operating cost, which was \$0.5 billion in FY 2013.¹ Much of this decrease was

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Net Cost: FY 2013 (\$3.7 trillion)

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Employee and veteran benefits, especially at the Department of Defense (DOD).

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Pros:

- Everyone has email

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Pros:

- Everyone has email
- Everyone has a PDF reader

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Pros:

- Everyone has email
- Everyone has a PDF reader
- It works on mobile devices

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Pros:

- Everyone has email
- Everyone has a PDF reader
- It works on mobile devices
- It's familiar

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Drawbacks:

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Drawbacks:

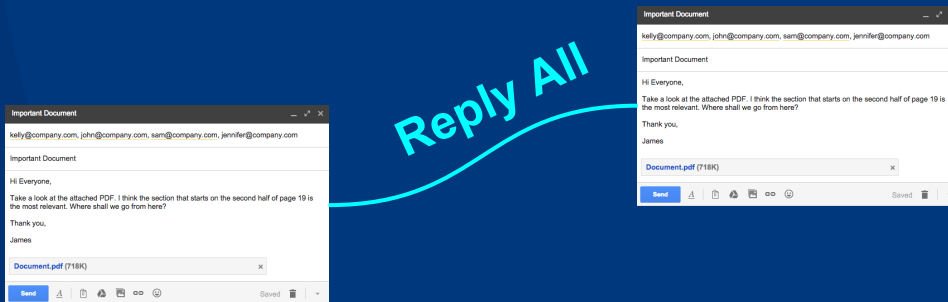
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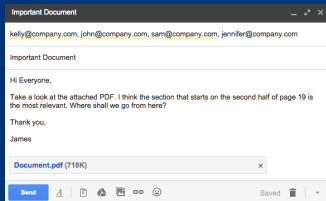


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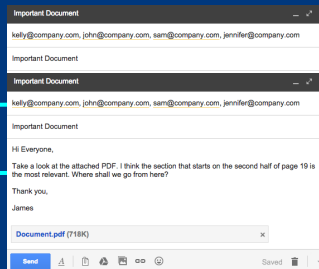
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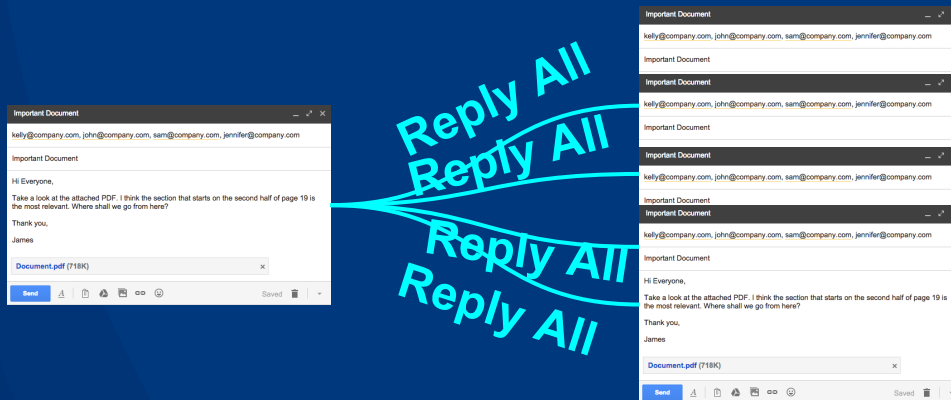


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- Attachment size limits

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- Attachment size limits
- Insecure

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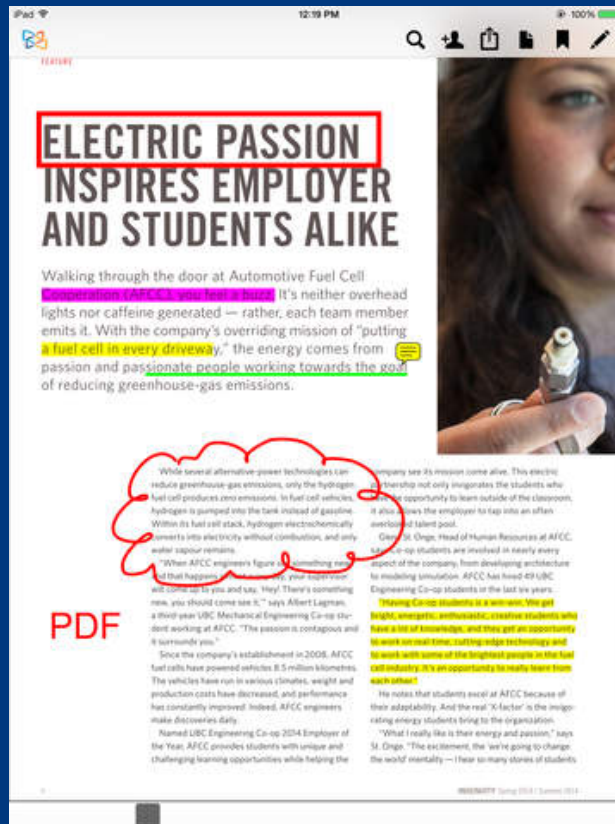
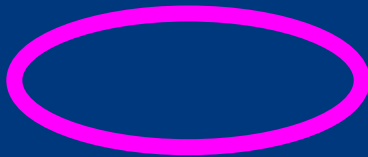
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- Email is a poor platform for collaborating around a PDF

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- Annotations help refer to content, but create their own challenges

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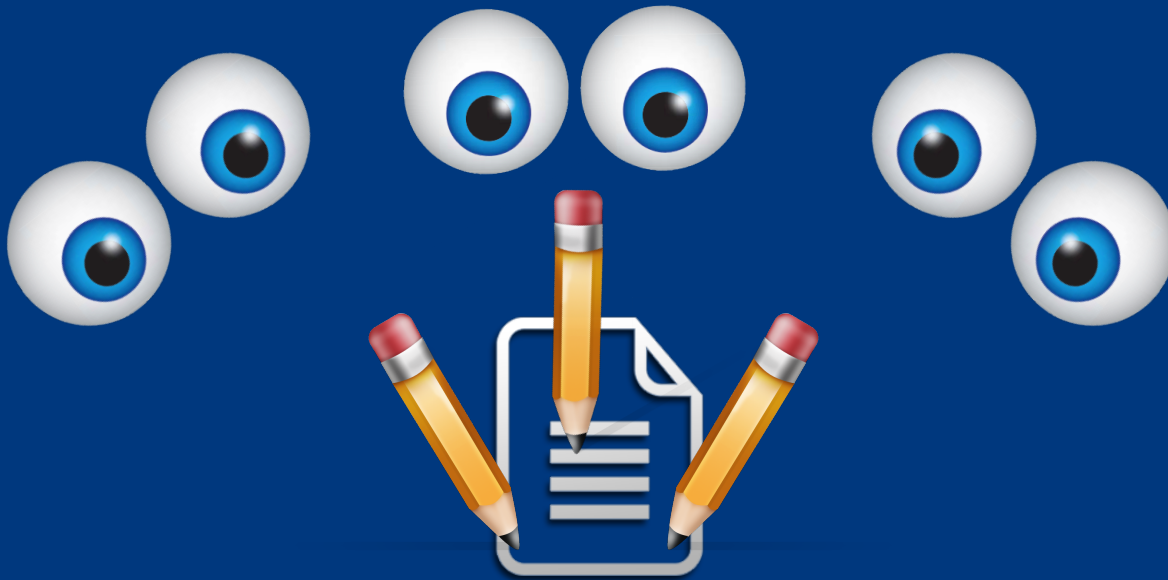
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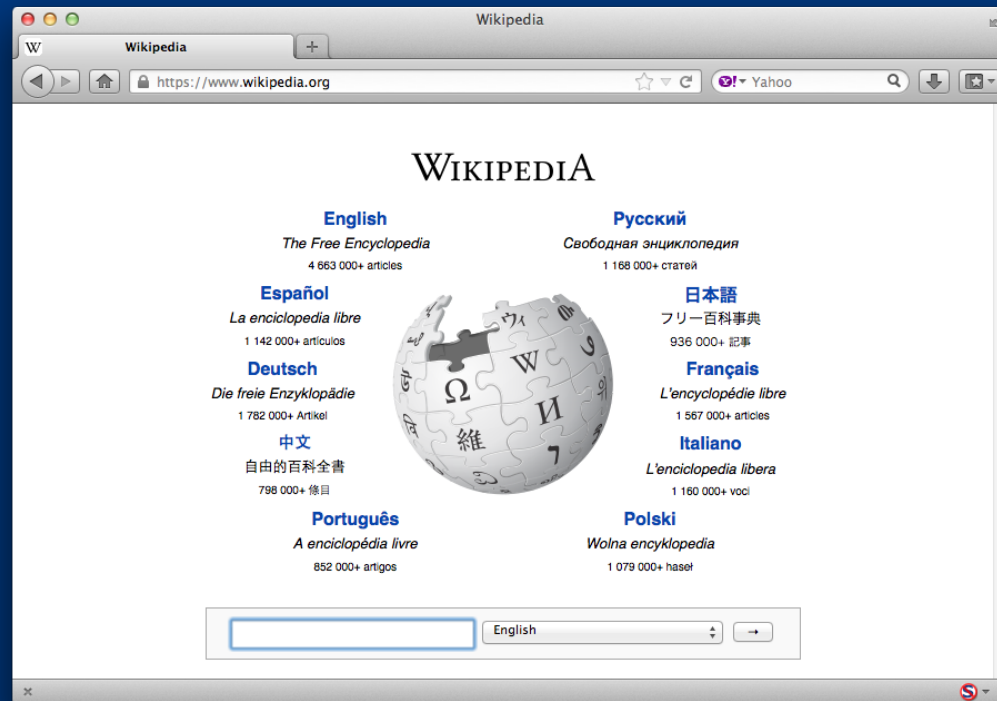
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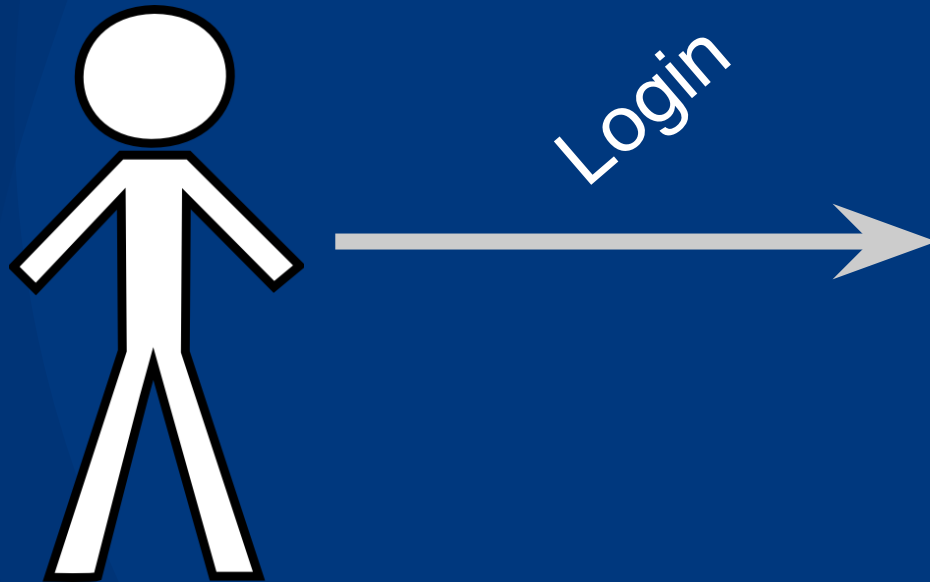
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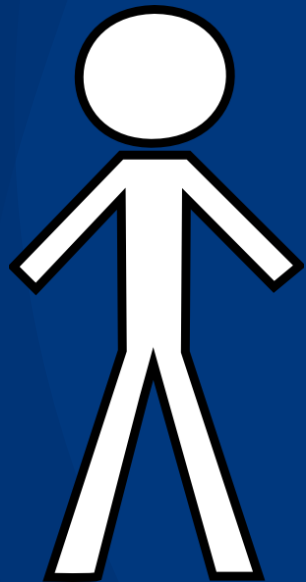
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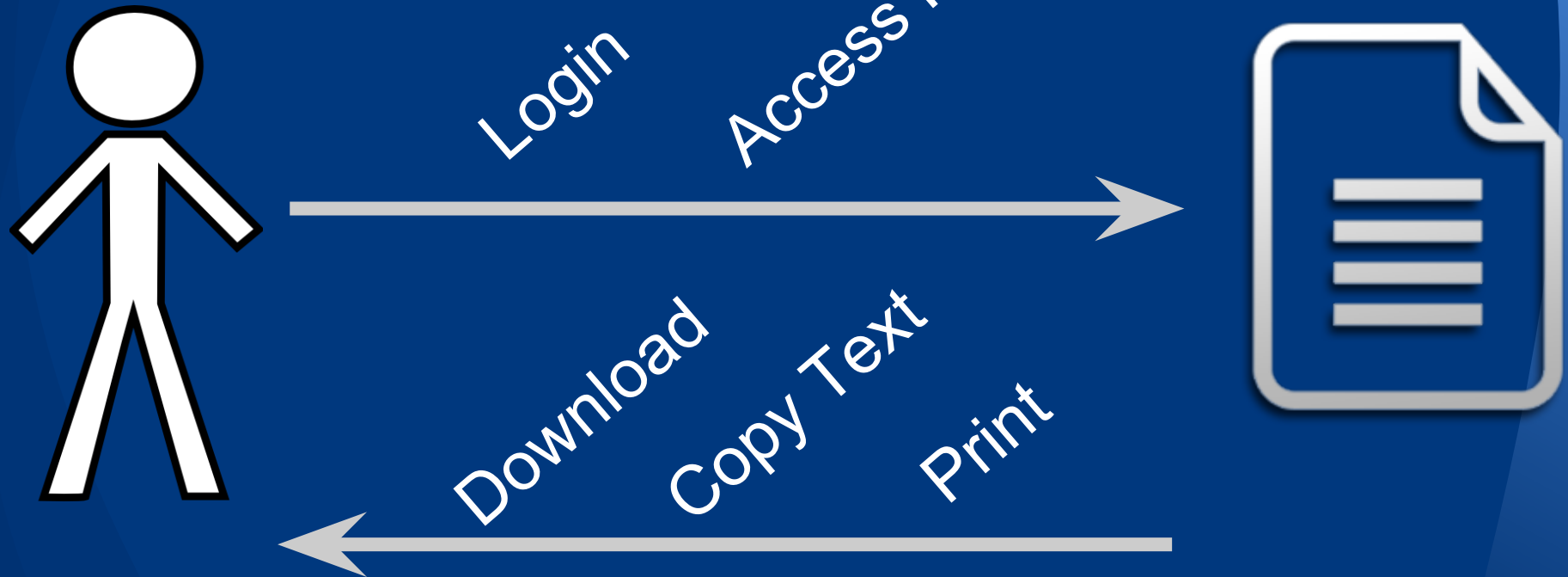
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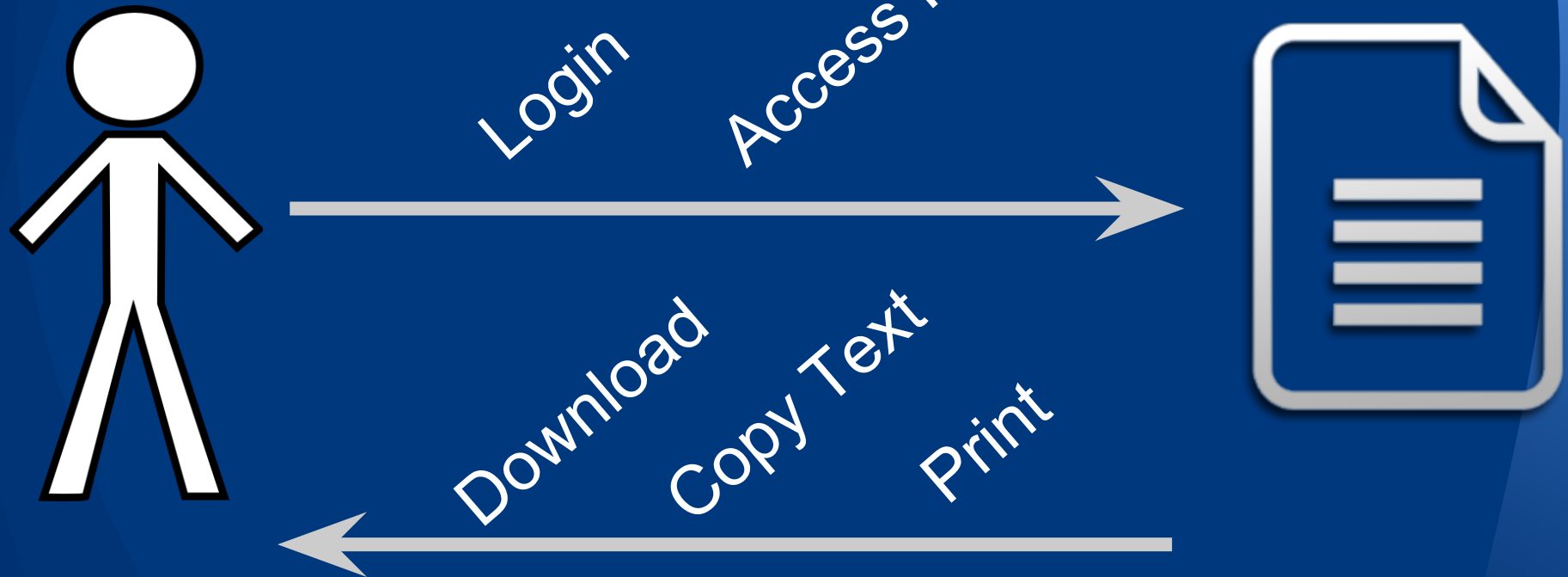
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Challenges in moving PDF collaboration to the web:

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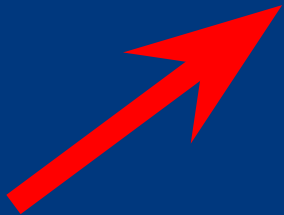
- Building it for mobile



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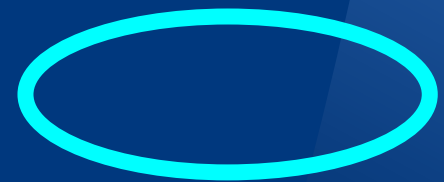
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Challenges in moving PDF collaboration to the web:

- Reliable PDF rendering

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Challenge: Reliable PDF rendering

Educational Brief

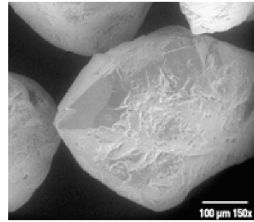
Using Space for a Better Foundation on Earth Mechanics of Granular Materials

For the Educator

Anyone who has ripped open a vacuum-packed pouch of coffee has experienced a fundamental aspect of mechanics of granular materials: a single shift in conditions can drastically change the properties of a bulk material. While the coffee pack is sealed under vacuum (negative pressure), the grains push against one another, locking each other in place, creating a stiff “brick-like” material. Once pressure is released, the grain assembly softens and moves freely, almost like a liquid.

The principal strength of granular materials—whether they are coffee, soil beneath a house, or sand under a rover’s wheels on Mars—is the friction between particles. Billions of grains, ranging in size from large to microscopic, contribute to the total strength of the material. Moisture and air trapped within the soil also affect its behavior if a load is applied faster than the entrapped fluid can escape. As the water pressure or air pressure within the pores increases, the effective or inter-particle stresses or pressures decrease, weakening and softening the soil. When the external loading equals the internal pore pressure, the soil liquefies.

This is relevant to many fields, not the least being earthquakes, which can loosen compacted soil and compact loosened soil. When this happens, buildings sink and buried structures float to the surface, as happened in the San Francisco Bay area in the October 1989 Loma Prieta earthquake. Yet another example can be seen on the Moon in the terraced walls of crater Copernicus. After the impact that formed the crater, gases trapped in the soil caused the lunar soil to lose strength and slide.



What look like boulders after a landslide are just sand grains seen under an electron microscope. Each tiny facet can stick to another grain and cause internal friction.

Liquefaction phenomena

Sandy soils are usually good foundation soils as long as they are not subjected to shaking, a dynamic load condition. The packing density and degree of saturation (how much of the pore space is filled with water) are the main factors that will determine how the sand deposit will react to a dynamic or cyclic load effect (e.g., earthquake load). When sandy soil deposits lie under the ground water table level in an earthquake-prone zone (like the U.S. West Coast or Japan), there is a high risk of sand *liquefaction* during a strong earthquake. Liquefaction occurs where loose packing of sand grains (i.e., large void volumes between sand grains) exists under the water table (also called fully saturated sand layer). Cyclic loads, such as those caused by an earthquake, will cause sand particles to lose contact with each other as a result of a sudden increase in the pore water pressure. Therefore, the soil will have zero strength since there is no contact between particles. We

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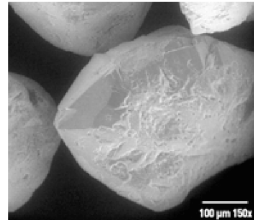
Using Space for a Better Foundation on Earth Mechanics of Granular Materials

For the Educator

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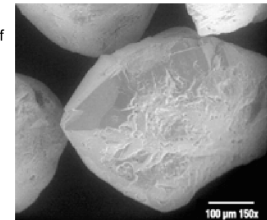
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Nomura Securities Co Ltd, Tokyo
Japanese Equity Research – First Look

First Look

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07.3期は建売住宅の
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減益で計画も下回った

07.3期は売上高が222億円(06.3期比7.6%減)、経常
0.5%減)であった。当社は2月7日に予想売上高をそれ
ら227億円、経常利益を38億円から32億円へ下方修正
された。減収減益の主要因は主力の建売住宅の販売棟数
期の806棟から大幅に減少したことである。土地分譲

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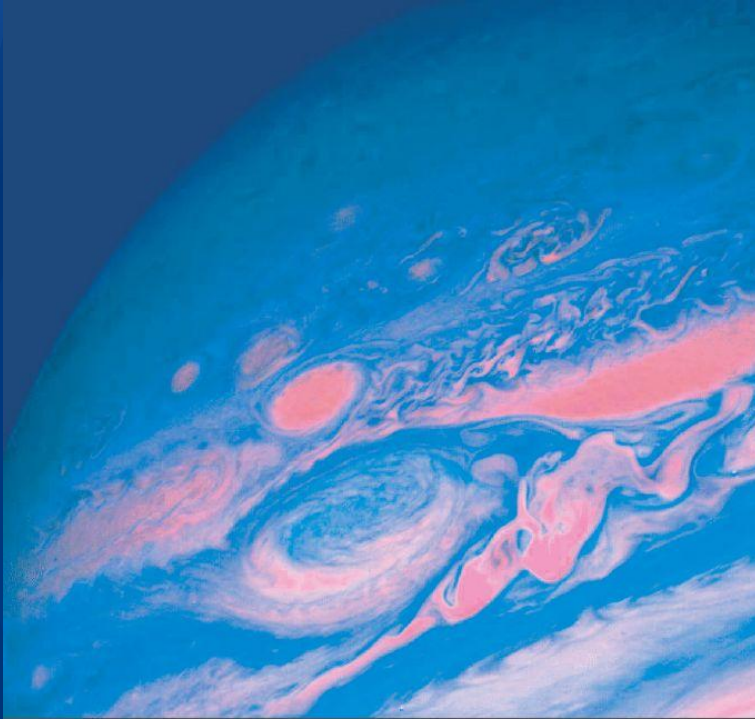
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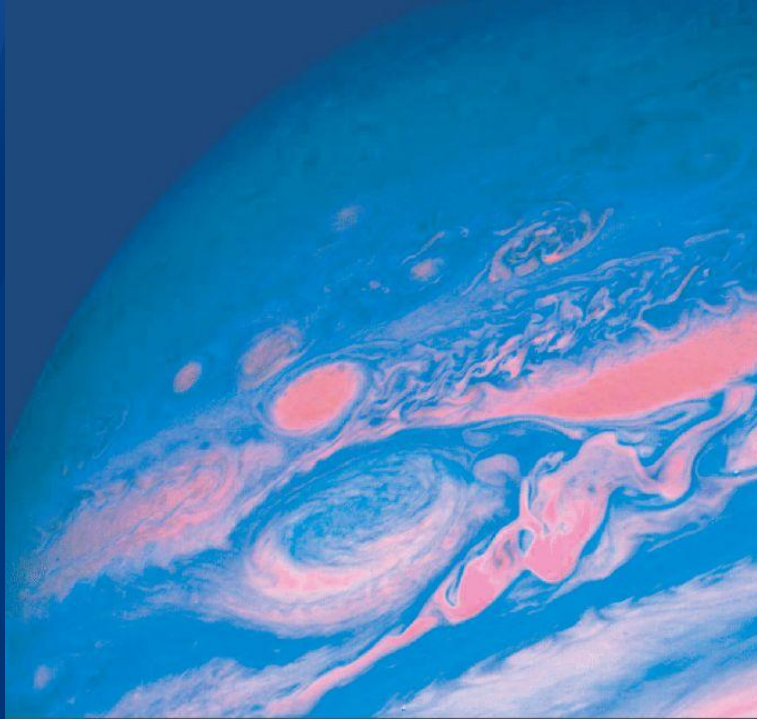


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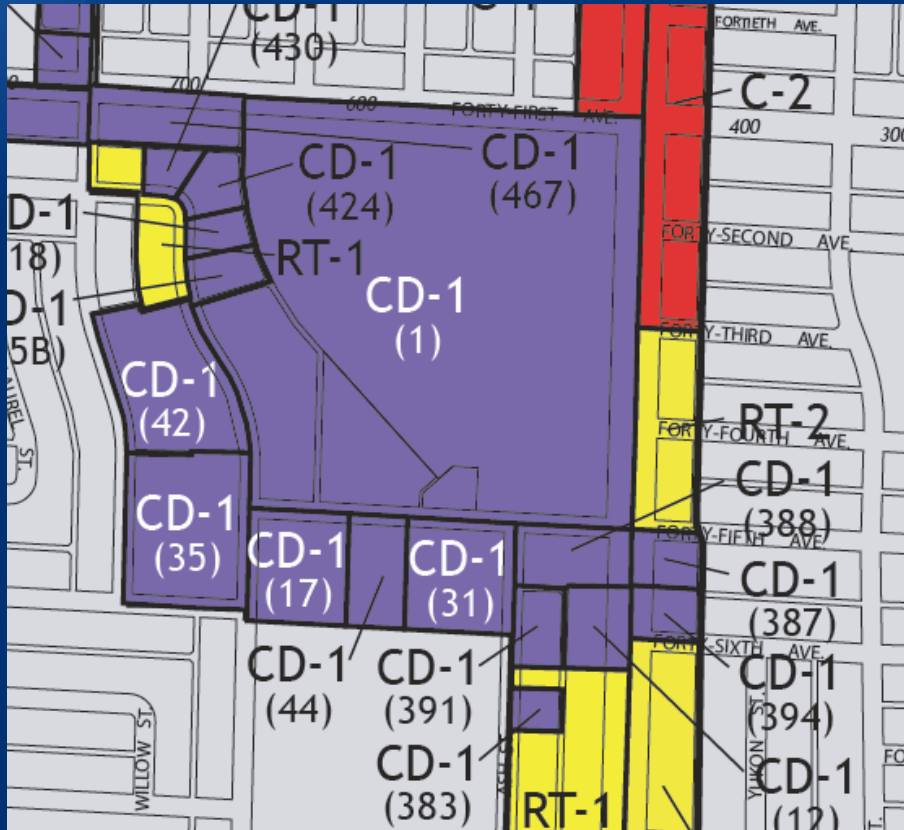
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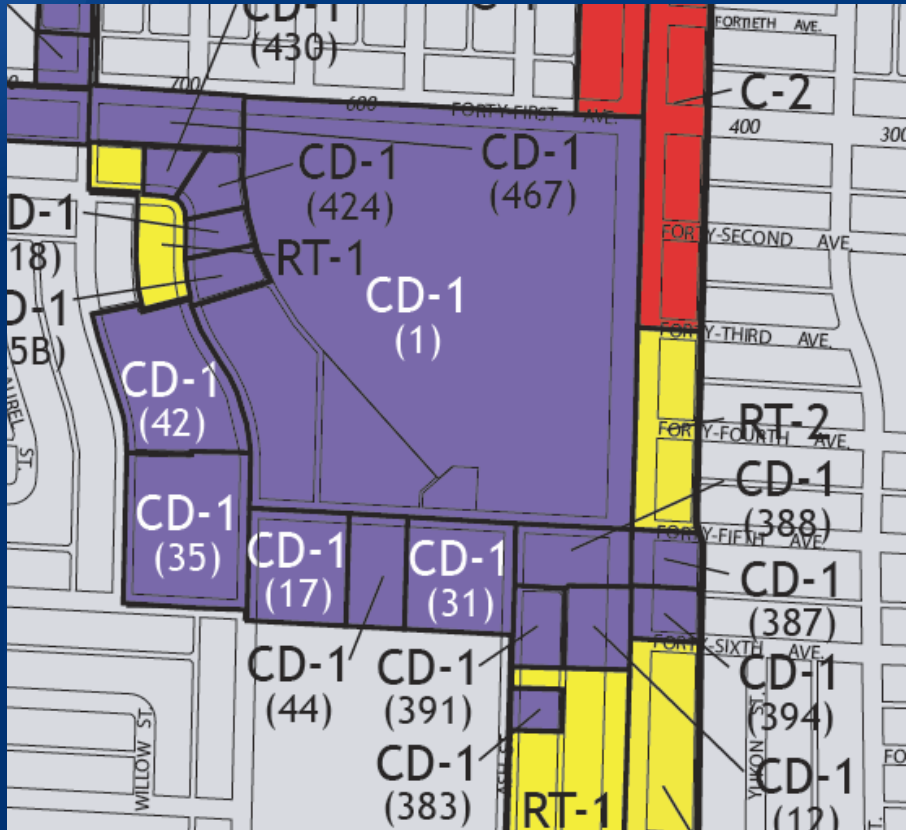
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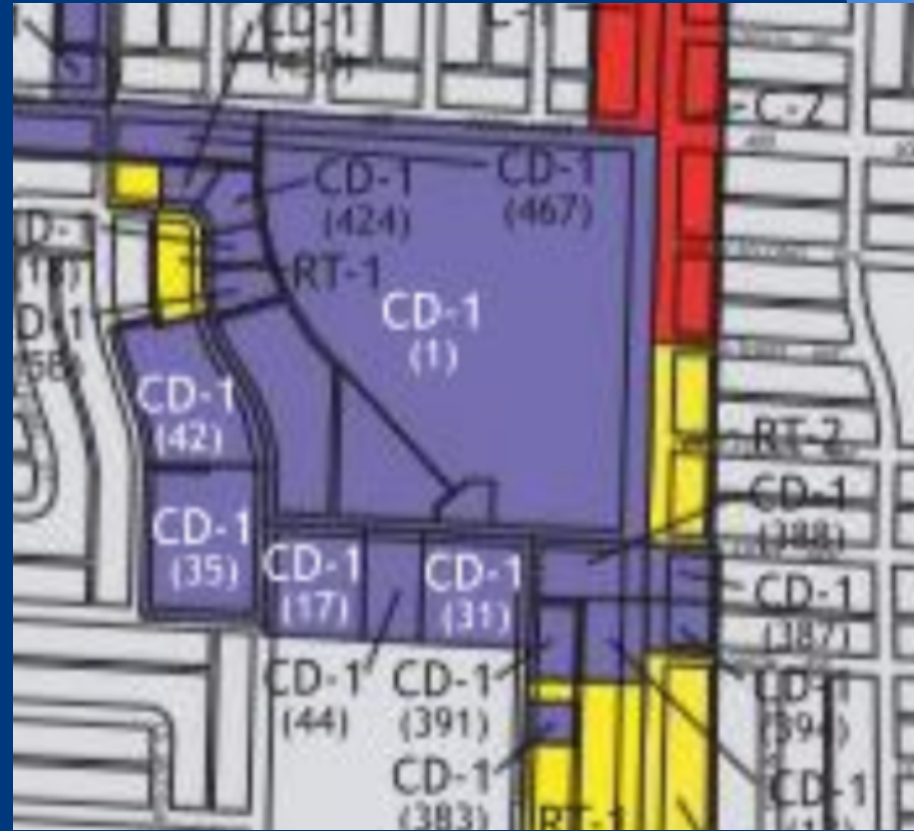
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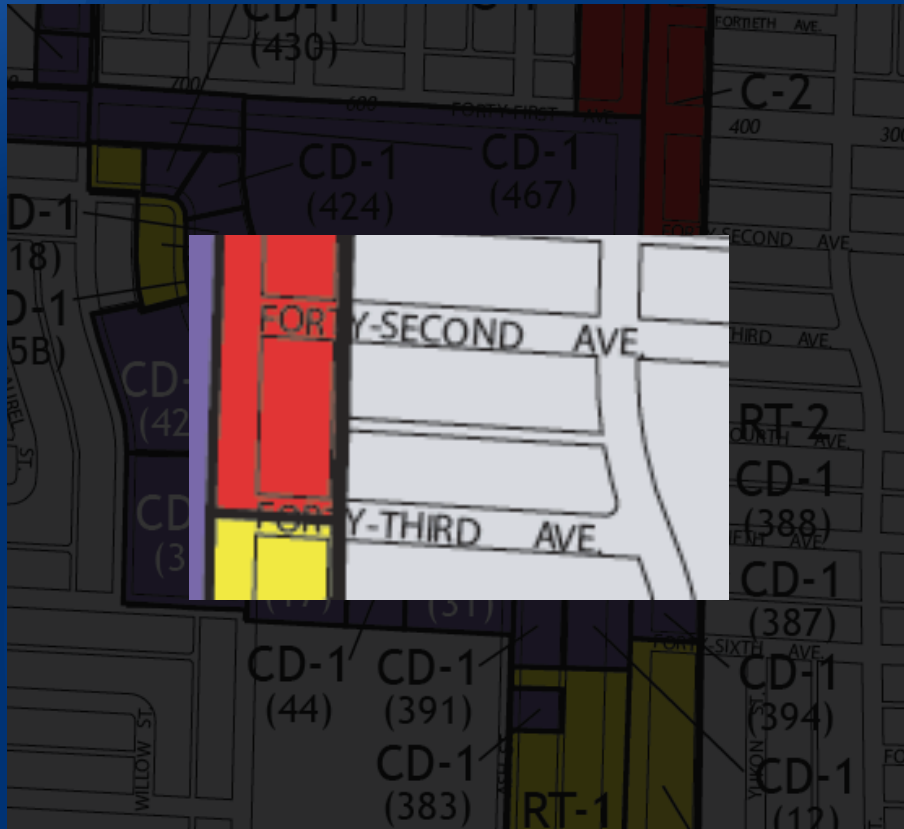
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- We now have the pieces we need to overcome challenges and build a more effective system

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